DCR-PC350/PC350E

RMT-831

SERVICE MANUAL

Ver 1.0 2004. 07

Revision History

How to use Acrobat Reader

Photo : DCR-PC350E

DCR-PC350

US Model
Canadian Model
Korea Model
Japanese Model

DCR-PC350E

AEP Model
UK Model
Australian Model
Chinese Model
Hong Kong Model

DCR-PC350/PC350E

E Model
Tourist Model

Z (Z200) MECHANISM

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987675351.pdf).

- For MECHANISM ADJUSTMENTS, refer to the “DV MECHANICAL ADJUSTMENT MANUAL Ⅷ Z (Z200) MECHANISM ” (EXCEPT J: 9-876-724-11) (J: 9-876-724-01).
- Reference number search on printed wiring boards is available.
- TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

On the CD-537 and VC-370 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the CD-537 and VC-370 board.
Therefore, schematic diagram, printed wiring board, waveforms, mounted parts location and electrical parts list of the CD-537 and VC-370 board are not shown.
The following pages are not shown.

Schematic diagram	Pages 4-29 to 4-64	Mounted parts location	Page 4-94 to 95
Printed wiring board	Pages 4-85 to 4-92	Electrical parts list	Pages 5-20 to 5-28

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

SONY®

DCR-PC350/PC350E
9-876-753-31

Sony EMCS Co.

2004G1600-1

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Published by DI Technical Support Section

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Self Diagnosis Supported model

HANDYCAM

InfoLITHIUM F SERIES

MEMORY STICK ™

SPECIFICATIONS

System

Video recording system
2 rotary heads, Helical scanning system

Still image recording system
Exif Ver. 2.2 *1
*1 "Exif" is a file format for still images, established by the JEITA (Japan Electronics and Information Technology Industries Association). Files in this format can have additional information such as your camcorder's setting information at the time of recording.

Audio recording system
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)

Video signal
DCR-PC350 :
NTSC color, EIA standards
DCR-PC350E :
PAL color, CCIR standards

Usable cassette
Mini DV cassette with the Mini DV mark printed

Tape speed
SP: Approx. 18.81 mm/s
LP: Approx. 12.56 mm/s

Recording/playback time (using a DVM60 cassette)
SP: 60 min
LP: 90 min

Fast forward/rewind time (using a DVM60 cassette)
Approx. 2 min 40 s

Viewfinder
Electric viewfinder (color)

Image device
5.9 mm (1/3 type) CCD (Charge Coupled Device)
Gross: Approx. 3 310 000 pixels
Effective (still): Approx. 3 050 000 pixels
Effective (movie): Approx. 2 050 000 pixels

Lens
Carl Zeiss Vario-Sonnar T*
Combined power zoom lens
Filter diameter: 30 mm (1 3/16 in.)
In CAMERA-TAPE:
10 × (Optical), 120 × (Digital)
In CAMERA-MEMORY:
8.5 × (Optical)
F = 1.8 ~ 2.9

Focal length
In CAMERA-TAPE:
5.1 - 51 mm (7/32 - 2 1/8 in.)
In CAMERA-MEMORY:
6.0 - 51 mm (1/4 - 2 1/8 in.)
When converted to a 35 mm still camera
In CAMERA-TAPE:
45 - 450 mm (1 13/16 - 17 3/4 in.)
In CAMERA-MEMORY:
44 - 374 mm (1 3/4 - 14 3/4 in.)

Color temperature
[AUTO], [ONE PUSH], [HOLD], [INDOOR] (3 200 K), [OUTDOOR] (5 800 K)

Minimum illumination
5 lx (lux) (F 1.8)
0 lx (lux) (during NightShot function)*
* Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/Output connectors

S video input/output
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced
Chrominance signal:
DCR-PC350 :
0.286 Vp-p, 75 Ω (ohoms), unbalanced
DCR-PC350E :
0.3 Vp-p, 75 Ω (ohoms), unbalanced
4-pin mini DIN

Audio/Video input/output
AV MINIJACK
Video signal: 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
Audio signal: 327 mV (at output impedance more than 47 kΩ (kilohms)), Input impedance more than 47 kΩ (kilohms), Output impedance with less than 2.2 kΩ (kilohms)

LANC jack
Stereo mini-minijack (Ø 2.5 mm)

MIC jack
Minijack, 0.388 mV low impedance with DC 2.5 to 3.0 V, output impedance 6.8 kΩ (kilohms) (Ø 3.5 mm), Stereo type

LCD screen

Picture
6.2 cm (2.5 type)

Total dot number
123 200 (560 × 220)

General

Power requirements
DC 7.2 V (battery pack)
DC 8.4 V (AC Adaptor)

Average power consumption (when using the battery pack)
During camera recording using the viewfinder
DCR-PC350 : 3.1 W
DCR-PC350E : 2.9 W
During camera recording using the LCD
DCR-PC350 : 3.4 W
DCR-PC350E : 3.2 W

Operating temperature
0° C to 40° C (32° F to 104° F)

Storage temperature
-20° C to + 60° C (-4° F to + 140° F)

Dimensions (approx.)
57.3 ×10 7.3 × 106.7 mm (2 3/8 × 4 1/4 × 4 1/4 in.)
(w/h/d)

Mass (approx.)
440 g (15 oz) main unit only
510 g (18 oz) including the NP-FF51 rechargeable battery pack, DVM60 cassette and lens cap.

Supplied accessories
See page 5-13.

Handycam Station DCRA-C111

S video input/output
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced
Chrominance signal:
DCR-PC350 :
0.286 Vp-p, 75 Ω (ohoms), unbalanced
DCR-PC350E :
0.3 Vp-p, 75 Ω (ohoms), unbalanced
4-pin mini DIN

Audio/Video input/output
AV MINIJACK
Input/output auto switch
Video signal: 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
Audio signal: 327 mV, (at output impedance more than 47 kΩ (kilohms))
Input impedance more than 47 kΩ (kilohms)
Output impedance with less than 2.2 kΩ (kilohms)

USB jack
mini-B

DV input/output
4-pin connector

AC Adaptor AC-L25A/L25B

Power requirements
AC 100 - 240 V, 50/60 Hz

Current consumption
0.35 - 0.18 A

Power consumption
18 W

Output voltage
DC 8.4 V, 1.5 A

Operating temperature
0° C to 40° C (32° F to 104° F)

Storage temperature
-20° C to + 60° C (-4° F to + 140° F)

Dimensions (approx.)
56 × 31 × 100 mm (2 1/4 × 1 1/4 × 4 in.)
(w/h/d) excluding the projecting parts

Mass (approx.)
190 g (6.7 oz) excluding the power cord

Rechargeable battery pack (NP-FF51)

Maximum output voltage
DC 8.4 V

Output voltage
DC 7.2 V

Capacity
5.6 Wh (780 mAh)

Dimensions (approx.)
40.8 × 12.5 × 49.1 mm
(1 5/8 × 1/2 × 1 15/16 in.) (w/h/d)

Mass (approx.)
45 g (1.6 oz)

Operating temperature
0° C to 40° C (32° F to 104° F)

Type
Lithium ion

Design and specifications are subject to change without notice.

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自己診断搭載機種

概略仕様

◆システム

録画方式	回転2ヘッドヘリカルスキャン
静止画記録方式*1	Exif Ver.2.2
録音方式	回転2ヘッド 12ビット32kHz （ステレオ1、ステレオ2） 16ビット48kHz（ステレオ）
映像信号	NTSCカラー、EIA標準方式
使用可能カセット	Mini DV マークのついたミニDVカセット
テープ速度	SP：約18.81mm/秒 LP：約12.56m/秒
録画・再生時間	SP：60分（DVM60使用時） LP：90分（DVM60使用時）
早送り、巻き戻し時間	約2分40秒（DVM60使用時）
ファインダー	電子ファインダー：カラー
撮像素子	5.9mm（1/3型）CCD固体撮像素子 総画素数：約331万画素 静止画時有効画素数：約305万画素 動画時有効画素数：約205万画素
ズームレンズ	カール ツァイス バリオゾナー T* 「撮る-テープ」時： 10倍（光学）、120倍（デジタル） f=5.1～51mm 「撮る-メモリー」時： 8.5倍（光学） f=6.0～51mm 35mmカメラ換算では 「撮る-テープ」時： 45～450mm 「撮る-メモリー」時： 44～374mm F1.8～2.9 フィルター径30mm
色温度切り換え	[オート]、[ワンプッシュ]、[ホールド]、 [オクナイ]（3 200K）、 [オクガイ]（5 800K）
最低被写体照度	11 lx（ルクス）（F1.8） 0 lx（ルクス）（NightShot時）

*1（社）電子情報技術産業協会（JEITA）にて制定された、撮影情報などの付帯情報を追加することができる静止画用のファイルフォーマット。

◆入・出力端子

S1映像端子	入力／出力自動切り替え Y出力 1 Vp-p 75 Ω不平衡 C出力 0.286 V p-p 75 Ω不平衡
映像・音声端子	AVミニジャック 入力／出力自動切り換え 映像：1 Vp-p、75 Ω不平衡 音声：327mV（47 kΩ負荷時）、入力インピーダンス47 kΩ以上、出力インピーダンス2.2 kΩ以下
LANC端子	ステレオミニミニジャック（φ2.5）
マイク入力端子	ステレオミニジャック（φ3.5）

◆液晶画面

画面サイズ	6.2cm（2.5型）
総ドット数	123 200ドット 横560× 縦220

◆電源部、その他

電源電圧	バッテリー端子入力7.2V DC端子入力8.4V
消費電力	3.1W（ファインダー使用時、明るさ標準） 3.4W （液晶画面使用時、明るさ標準）
動作温度	0℃～+40℃
保存温度	−20℃～+60℃
外形寸法	57.3×107.3×10 6.7mm （最大突起部を除く）（幅×高さ×奥行き）
本体質量	約440g（本体のみ）
撮影時総質量	約510g （バッテリー NP-FF51、テープ（DVM60）、レンズキャップ含む。）
付属品	5-14ページをご覧ください。

◆ハンディカムステーション 入・出力端子 DCRA-C110

S1映像端子	入力／出力自動切り替え Y出力 1 Vp-p 75Ω 不平衡 C出力 0.286 Vp-p 75Ω不平衡
映像・音声端子	AVミニジャック 入力／出力自動切り換え 映像：1 Vp-p、75 Ω 不平衡 音声：327 mV（47 kΩ負荷時）、入力インピーダンス47 kΩ以上、出力インピーダンス2.2 kΩ以下
USB端子	mini-B
DV端子	i.LINK（IEEE1394 4ピンコネクター S100）

◆ACアダプター AC-L25A/L25B

電源	AC100～240V、50/60Hz
消費電力	18W
定格出力	DC8.4V、1.5A
動作温度	0℃～+40℃
保存温度	−20℃～+60℃
外形寸法	約56×31×100 mm （最大突起部をのぞく） （幅×高さ×奥行き）
質量	約190g（本体のみ）

◆リチャージャブルバッテリーパックNP-FF51

最大電圧	DC8.4V
公称電圧	DC7.2V
容量	5.6wh（780 mAh）
最大外形寸法	約40.8×12.5×49.1mm （幅×高さ×奥行き）
質量	約45g
使用温度	0℃～+40℃
使用電池	Li-ion

本機の仕様および外観は、改良のため予告なく変更することがありますが、ご了承ください。

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

サービス、点検時には次のことにご注意下さい。

1. 注意事項をお守り下さい。

サービスのとき特に注意を要する箇所については，キャビネット，シャーシ，部品などにラベルや捺印で注意事項を表示しています。　これらの注意書きおよび取扱説明書等の注意事項を必ずお守り下さい。

2. 指定部品のご使用を

セットの部品は難然性や耐電圧など安全上の特性を持ったものとなっています。従って交換部品は，使用されていたものと同じ特性の部品を使用して下さい。　特に回路図，部品表に⚠印で指定されている安全上重要な部品は必ず指定のものをご使用下さい。

3. 部品の取付けや配線の引きまわしは もとどおりに

安全上，チューブやテープなどの絶縁材料を使用したり，プリント基板から浮かして取付けた部品があります。　また内部配線は引きまわしやクランパによって発熱部品や高圧部品に接近しないよう配慮されていますので，これらは必ずもとどおりにして下さい。

4. サービス後は安全点検を

サービスのために取外したネジ，部品，配線がもとどおりになっているか，またサービスした箇所の周辺を劣化させてしまったところがないかなどを点検し，安全性が確保されていることを確認して下さい。

5. チップ部品交換時の注意

・取り外した部品は再使用しないで下さい。
・タンタルコンデンサのマイナス側は熱に弱いため交換時は注意して下さい。

注　意
電池の交換は，正しく行わないと破裂する可能性があります。
電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

6. フレキシブルプリント基板の取扱について

・コテ先温度を270℃前後にして行なって下さい。
・同一パターンに何度もコテ先を当てないで下さい。
（３回以内）
・パターンに力が加わらないよう注意して下さい。

無鉛半田について

無鉛半田を使用している基板には，無鉛（Lead Free）を意味するレッドフリーマークがプリントされています。
（注意：　基板サイズによっては，無鉛半田を使用していてもレッドフリーマークがプリントされていないものがあります）

：レッドフリーマーク

無鉛半田には，以下の特性があります。

・ 融点が従来の半田よりも約40℃高い。
従来の半田こてをそのまま使用することは可能ですが，少し長めにこてを当てる必要があります。
温度調節機能のついた半田こてを使用する場合，約350℃に設定して下さい。
注意：半田こてを長く当てすぎると，基板のパターン（銅箔）がはがれてしまうことがありますので，注意して下さい。
・ 粘性が強い
従来の半田よりも粘性が強いため，IC端子などが半田ブリッジしないように注意して下さい。
・ 従来の半田と混ぜて使用可能
無鉛半田には無鉛半田を追加するのが最適ですが，従来の半田を追加しても構いません。

TABLE OF CONTENTS

1. SERVICE NOTE

1-1. SERVICE NOTE ····· 1-1
1. NOTE FOR REPAIR ····· 1-1
2. POWER SUPPLY DURING REPAIRS ····· 1-2
3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT) ····· 1-2
4. DISCHARGING OF THE FLASHLIGHT POWER SUPPLY CAPACITOR ····· 1-3
4-1. PREPARING THE SHORT JIG ····· 1-3
4-2. DISCHARGING THE CAPACITOR ····· 1-3
1-2. SELF-DIAGNOSIS FUNCTION ····· 1-4
1. SELF-DIAGNOSIS FUNCTION ····· 1-4
2. SELF-DIAGNOSIS DISPLAY ····· 1-4
3. SELF-DIAGNOSIS CODE TABLE ····· 1-5

2. DISASSEMBLY

2-1. DISASSEMBLY ····· 2-1
2-2. SERVICE POSITION ····· 2-5
2-3. CIRCUIT BOARDS LOCATION ····· 2-9
2-4. FLEXIBLE BOARDS LOCATION ····· 2-10
HELP (List of caution points is shown here.)

3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/4) ····· 3-1
3-2. OVERALL BLOCK DIAGRAM (2/4) ····· 3-3
3-3. OVERALL BLOCK DIAGRAM (3/4) ····· 3-5
3-4. OVERALL BLOCK DIAGRAM (4/4) ····· 3-7
3-5. POWER BLOCK DIAGRAM (1/2) ····· 3-9
3-6. POWER BLOCK DIAGRAM (2/2) ····· 3-11

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/3) ····· 4-1
FRAME SCHEMATIC DIAGRAM (2/3) ····· 4-3
FRAME SCHEMATIC DIAGRAM (3/3) ····· 4-5
4-2. SCHEMATIC DIAGRAMS
• CR-048 (CRADLE CONNECTOR) SCHEMATIC DIAGRAM ····· 4-9
• SE-151 (PITCH/YAW SENSOR AMP) SCHEMATIC DIAGRAM ····· 4-11
• FP-995 (JACK) SCHEMATIC DIAGRAM ····· 4-11
• VP-060 (RELAY, KEY) SCHEMATIC DIAGRAM ····· 4-13
• FP-993 FLEXIBLE (RELAY) SCHEMATIC DIAGRAM ····· 4-13
• FP-994 FLEXIBLE (RELAY) SCHEMATIC DIAGRAM ····· 4-13
• MS-234 (MIC AMP) SCHEMATIC DIAGRAM ····· 4-15
• ST-108 (FLASH DRIVE) SCHEMATIC DIAGRAM ····· 4-17
• FLASH UNIT (FL7450) SCHEMATIC DIAGRAM ····· 4-17
• PD-225 (RGB DRIVE, TG) SCHEMATIC DIAGRAM ····· 4-19
• CONTROL SWITCH BLOCK (SB7450) SCHEMATIC DIAGRAM ····· 4-19
• FP-996 FLEXIBLE (SIRCS, NIGHTSHOT) SCHEMATIC DIAGRAM ····· 4-21
• CONTROL SWITCH BLOCK (FK7450) SCHEMATIC DIAGRAM ····· 4-23
• CONTROL SWITCH BLOCK (PS7450) SCHEMATIC DIAGRAM ····· 4-25
• FP-228/FP-467/FP-826 FLEXIBLE SCHEMATIC DIAGRAM ····· 4-27

Shematic diagram of the CD-537 and VC-370 board are not shown.
Pages from 4-29 to 4-64 are not shown.

4-3. PRINTED WIRING BOARDS
• CR-048 (CRADLE CONNECTOR) PRINTED WIRING BOARD ····· 4-67
• SE-151 (PITCH/YAW SENSOR AMP) PRINTED WIRING BOARD ····· 4-69
• VP-060 (RELAY, KEY) PRINTED WIRING BOARD ····· 4-71
• MS-234 (MIC AMP) PRINTED WIRING BOARD ····· 4-73
• ST-108 (FLASH DRIVE) PRINTED WIRING BOARD ····· 4-77
• PD-225 (RGB DRIVE, TG) PRINTED WIRING BOARD ····· 4-79
• FP-993 FLEXIBLE (RELAY) PRINTED WIRING BOARD ····· 4-81
• FP-994 FLEXIBLE (RELAY) PRINTED WIRING BOARD ····· 4-81
• FP-995 FLEXIBLE (JACK) PRINTED WIRING BOARD ····· 4-81
• FP-996 FLEXIBLE (SIRCS, NIGHTSHOT) PRINTED WIRING BOARD ····· 4-83
• FP-228/467/826 FLEXIBLE PRINTED WIRING BOARD ····· 4-83

Printed wiring board of the CD-537 and VC-370 board are not shown.
Pages from 4-85 to 4-92 are not shown.

4-4. MOUNTED PARTS LOCATION ····· 4-93

Mounted parts location of the CD-537 and VC-370 board are not shown.
Pages from 4-94 to 4-95 are not shown.

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS ····· 5-3
5-1-1. OVERALL SECTION ····· 5-3
5-1-2. F PANEL/LENS SECTION ····· 5-4
5-1-3. FK SECTION ····· 5-5
5-1-4. EVF SECTION ····· 5-6
5-1-5. MD SECTION ····· 5-7
5-1-6. CABINET (R) SECTION-1 ····· 5-8
5-1-7. CABINET (R) SECTION-2 ····· 5-9
5-1-8. MECHANISM DECK OVERALL (Z200) ····· 5-10
5-1-9. LS CHASSIS BLOCK ASSEMBLY ····· 5-11
5-1-10. MECHANICAL CHASSIS BLOCK ASSEMBLY ··· 5-12
5-2. ELECTRICAL PARTS LIST ····· 5-15

Electrical parts list of the CD-537 and VC-370 board are not shown.
Pages from 5-20 to 5-28 are not shown.

SECTION 1
SERVICE NOTE

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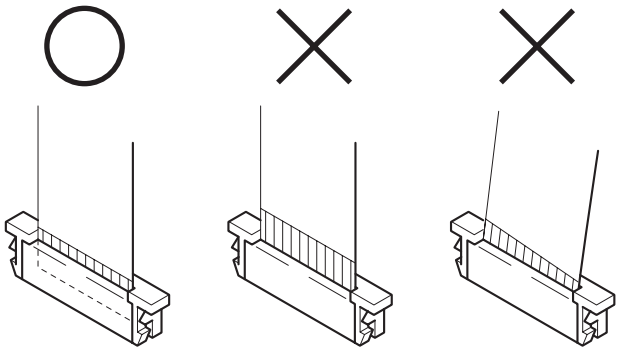
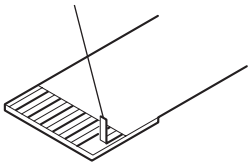
1-1. SERVICE NOTE

1. NOTE FOR REPAIR

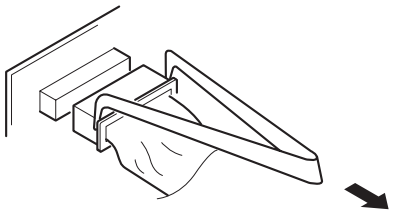
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



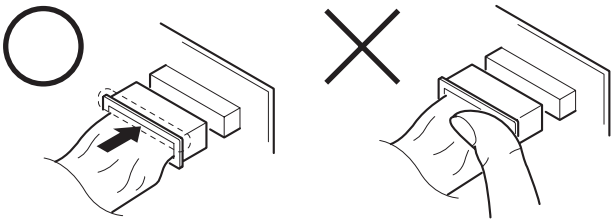
Cut and remove the part of gilt which comes off at the point. (Take care that there are some pieces of gilt left inside)



When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.



When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.



2. POWER SUPPLY DURING REPAIRS

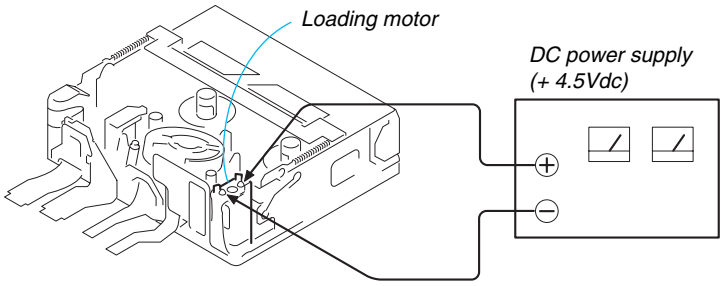
In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4V), the power is shut off so that the unit cannot operate.
This following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Use the AC power adaptor (AC-L25).

Method 2.
Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the "ADJ" side.

3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Remove the rear cabinet assembly.
② Remove the top cabinet assembly.
③ Refer to "4. DISCHARGING OF THE FLASHLIGHT POWER SUPPLY CAPACITOR" to discharge the flash power supply capacitor.
④ Remove the cabinet (R) section.
⑤ Remove the FK block.
⑥ Remove the EVF section.
⑦ Remove the control switch block (PS7450).
⑧ Remove the VC-370 board.
⑨ Remove the mechanism deck.
⑩ Supply +4.5V from the DC power supply to the loading motor and unload with pressing the cassette compartment.

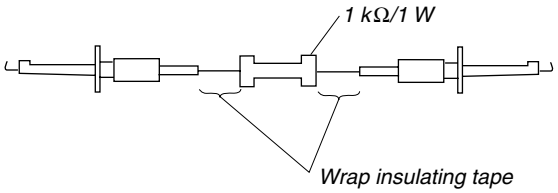


4. DISCHARGING OF THE FLASHLIGHT POWER SUPPLY CAPACITOR

The power supply capacitor (C1001) of the flash unit (FL7450) is charged up to the maximum 300V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the unit is simply turned off. Therefore, the remaining voltage must be discharged as described below.

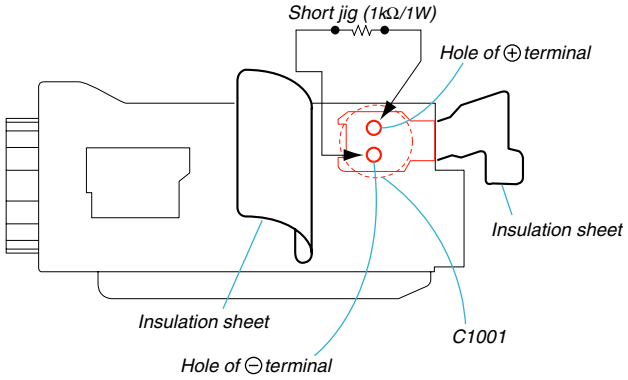
4-1. PREPARING THE SHORT JIG

To preparing the short jig. a small clip is attached to each end of a resistor of 1kΩ/1W (1-215-869-119)
Wrap insulating tape fully around the reads of the resistor to prevent electric shock.



4-2. DISCHARGING THE CAPACITOR

① Remove the rear cabinet assembly.
② Remove the top cabinet assembly.
③ Open the insulation sheets.
④ Short-circuit between ⊕ and ⊖ terminal of the capacitor (C1001) with short jig about 10 seconds.



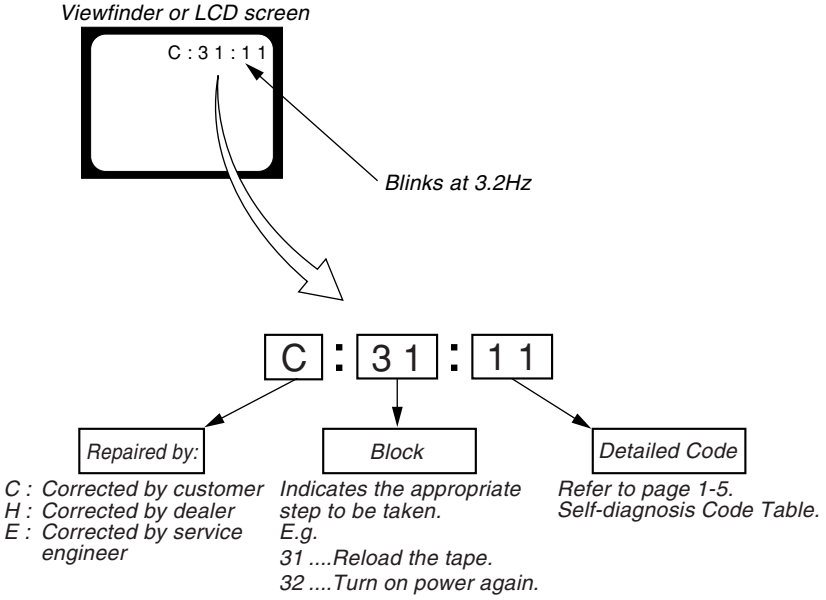
1-2. SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder, or LCD screen what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

2. SELF-DIAGNOSIS DISPLAY

When problems occur while the unit is operating, the counter of the viewfinder or LCD screen consists of an alphabet and 4-digit number, which blinks at 3.2Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.


Viewfinder or LCD screen
C : 3 1 : 1 1
Blinks at 3.2Hz
C : 3 1 : 1 1
Repaired by:
Block
Detailed Code
C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer
Indicates the appropriate step to be taken.
E.g.
31 ....Reload the tape.
32 ....Turn on power again.
Refer to page 1-5.
Self-diagnosis Code Table.

Note: The self-diagnosis display data will be kept even if the lithium battery (BT800 of MS-234 board) is removed.

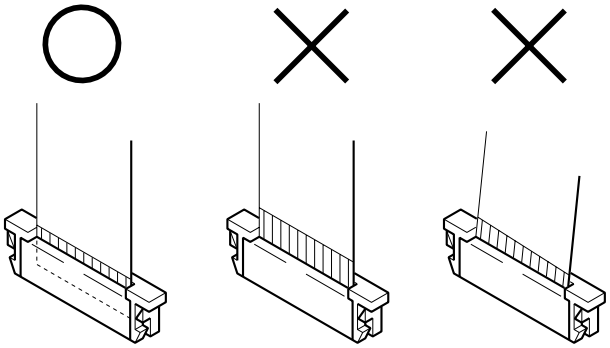
3. SELF-DIAGNOSIS CODE TABLE

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the info LITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	2	0	0	0	Data on A page or D page are rewriten.	Make data A page and D page correct value.
E	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus MR sensor (Pin ⑬, ⑮ of CN1301 of VC-370 board) when focusing is performed when the focus ring is rotated in the focus manual mode, and the focus motor drive circuit (IC1301 of VC-370 board) when the focusing is not performed.
E	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom MR sensor (Pin ⑯, ⑱ of CN1301 of VC-370 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC1301 of VC-370 board) when zooming is not performed.
E	6	2	0	0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE2501 of SE-151 board) peripheral circuits.
E	6	2	0	1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE2500 of SE-151 board) peripheral circuits.
E	9	1	0	1	Abnormality when the power supply capacitor of the flash unit is being charged.	Checking or replacement of the flash unit.

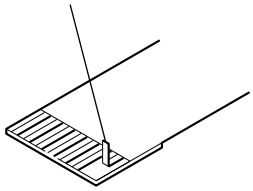
1–1. サービスノート

1. 修理時の注意

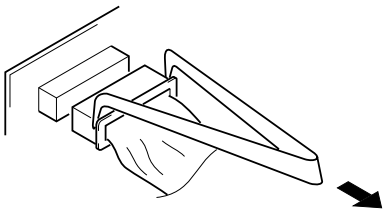
フラットケーブルおよびフレキシブル基板の端子面に欠け，折れ等がないことを確認する。
また，コネクタへの接続は，差し込み不足や斜め差しにならないように注意する。



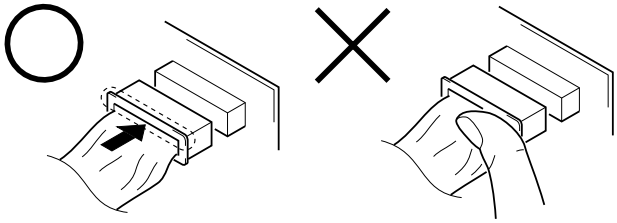
先端の剥がれたメッキ部はカットして除去する。
（メッキ破片がコネクタ内に残っている場合もあるので注意）



コネクタを取り外す時に，線材部（極細）を持って引っ張ると断線する恐れがありますので，絶対に線材部（極細）を持って引っ張らないで下さい。



線材部（極細）を押さえながらコネクタを差し込むと，線材部（極細）が断線する恐れがありますので，絶対に線材部（極細）には負担をかけないで下さい。



2. 修理／調整時の電源供給について

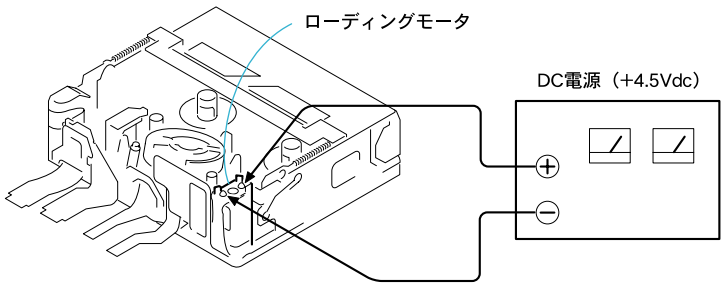
本機では，安定化電源（8.4Vdc）からバッテリー端子に電源を供給した場合，約10秒後にシャットオフし，動作しなくなります。
これを避けるため，下記のいずれかの方法を用いてください。

方法1：
DC入力端子を使用する。（ACアダプタを使用する。）

方法2：
調整リモコンRM-95（J-6082-053-B）を本機のLANCジャックに接続し，HOLDスイッチをADJ側にする。

3. イジェクトしない時のカセット取出し方法（強制イジェクト）

① リアキャビネット組立を外す。
② トップキャビネット組立を外す。
③「2. フラッシュ電源コンデンサの放電」を参照し，フラッシュ電源コンデンサを放電する。
④ キャビネット (R) を外す。
⑤ FKブロックを外す。
⑥ EVF部を外す。
⑦ 操作スイッチブロック (PS7450) を外す。
⑧ VC-370基板を外す。
⑨ 機構部を外す。
⑩ カセコン組立を押さえながら，DC電源より+4.5Vをローディングモータに加え，アンローディングさせる。

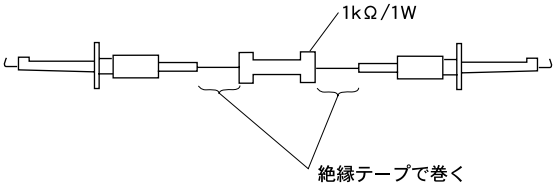


4. フラッシュ電源コンデンサの放電

フラッシュユニット(FL7450)の電源コンデンサ(C1001)は最大300Vの電圧で充電されています。
この高電圧で充電されたコンデンサに手を触れた場合,電気ショックを受けます。この高電圧は単にセットの電源を切っただけでは放電されず,残留しています。このため,下記の方法で,残留電圧を放電してください。

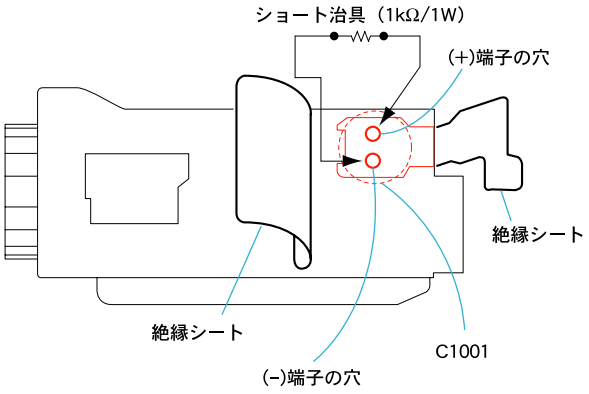
4-1. ショート治具の準備

ショート治具は1kΩ/1W抵抗 (1-215-869-11) の両端に小型のクリップを接続して作成します。
抵抗器は絶縁テープで完全に覆い電気ショックを受けないようにしてください。



4-2. コンデンサの放電

① リアキャビネット組立を外す。
② トップキャビネット組立を外す。
③ 絶縁シートを開く。
④ 電源コンデンサC1001の（+）と（-）端子をショート治具で約10秒間接続する。



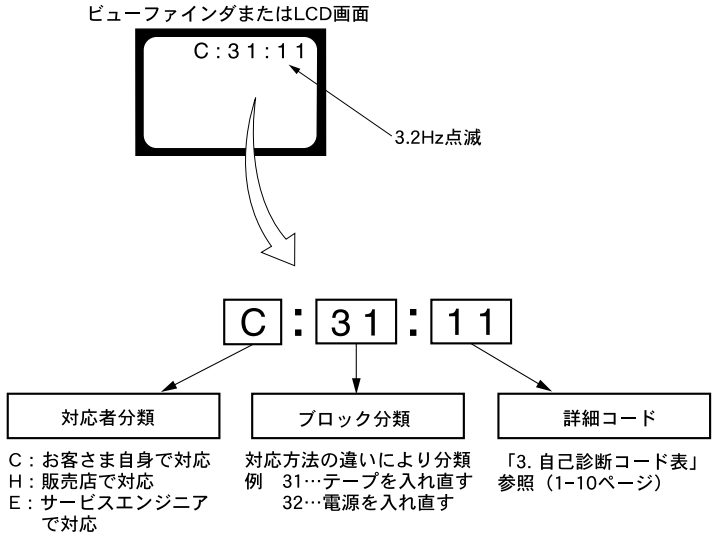
1-2. 自己診断機能

1. 自己診断機能について

本機の動作に不具合が生じたとき，自己診断機能が働き，ビューファインダまたはLCD画面に，どう処置したらよいか判断できる表示を行ないます。自己診断機能については取扱説明書にも掲載されています。

2. 自己診断表示

本機の動作に不具合が生じたとき，ビューファインダまたはLCD画面のカウンタ表示部分がアルファベットと数字の4桁表示になり，3.2Hzで点滅します。この5文字の表示によって，対応者分類および不具合の生じたブロックの分類，不具合の詳細コードを示します。



注意：「自己診断表示」データはリチウム電池（MS-234基板（BT800））を外しても消えません。

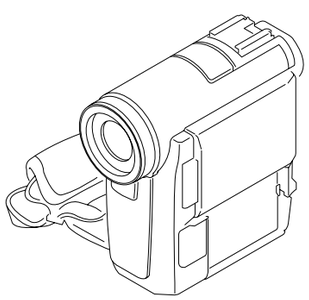
3. 自己診断コード表

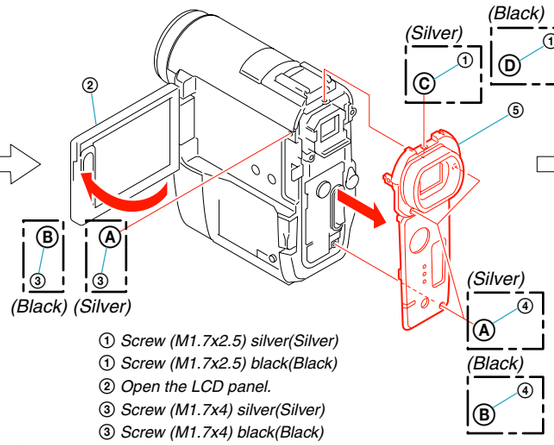
自己診断コード				症状／状態	対応／方法
対応者	ブロック機能		詳細コード		
C	0	4	0 0	インフォリチウム以外のバッテリを使用している	インフォリチウムバッテリを使用する
C	2	1	0 0	結露している	カセットを取り出して，約1時間してからもう一度入れ直す
C	2	2	0 0	ビデオヘッドが汚れている	別売のクリーニングカセットできれいにする
C	3	1	1 0	LOAD方向，ローディング所定時間内終了せず	テープを入れ直し，再度操作し直す
C	3	1	1 1	UNLOAD方向，ローディング所定時間内終了せず	テープを入れ直し，再度操作し直す
C	3	1	2 0	UNLOAD時，Tリール側テープ弛み	テープを入れ直し，再度操作し直す
C	3	1	2 1	テープ残量計算時，Sリール巻取り異常	テープを入れ直し，再度操作し直す
C	3	1	2 2	Tリール異常	テープを入れ直し，再度操作し直す
C	3	1	2 3	Sリール異常	テープを入れ直し，再度操作し直す
C	3	1	2 4	Tリール異常	テープを入れ直し，再度操作し直す
C	3	1	3 0	キャプスタン起動時FG異常	テープを入れ直し，再度操作し直す
C	3	1	4 0	ドラム起動時FG異常	テープを入れ直し，再度操作し直す
C	3	1	4 2	ドラム定常時FG異常	テープを入れ直し，再度操作し直す
C	3	2	1 0	LOAD方向，ローディング所定時間内終了せず	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	1 1	UNLOAD方向，ローディング所定時間内終了せず	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	2 0	UNLOAD時，Tリール側テープ弛み	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	2 1	テープ残量計算時，Sリール巻取り異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	2 2	Tリール異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	2 3	Sリール異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	2 4	Tリール異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	3 0	キャプスタン起動時FG異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	4 0	ドラム起動時FG異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
C	3	2	4 2	ドラム定常時FG異常	バッテリまたは電源ケーブルを外して付け直し，再度操作し直す
E	2	0	0 0	Aページ，Dページのデータが書き換えられている	Aページ，Dページのデータを元の値に戻す
E	6	1	0 0	フォーカスが合いにくい （フォーカスの初期化ができない）	フォーカス手動モードでフォーカスリングを回した時，フォーカス動作をすればレンズブロックのフォーカスMRセンサ（VC-370基板CN1301⑬，⑮ピンを点検。フォーカス動作をしなければフォーカスモータドライブ回路（VC-370基板IC1301）を点検
E	6	1	1 0	ズーム動作の異常（ズームレンズの初期化ができない）	ズームレバーを操作した時，ズーム動作をすればレンズブロックのズームMRセンサ（VC-370基板CN1301 ⑯，⑱ピン）を点検。ズーム動作をしなければズームモータドライブ回路（VC-370基板IC1301）を点検
E	6	2	0 0	手振れ補正が効きにくい （PITCH角速度センサ出力張り付き）	PITCH角速度センサ（SE-151基板SE2501）周辺回路点検
E	6	2	0 1	手振れ補正が効きにくい （YAW角速度センサ出力張り付き）	YAW角速度センサ（SE-151基板SE2500）周辺回路点検
E	9	1	0 1	フラッシュ電源コンデンサ充電時に異常	フラッシュユニットの点検または交換

SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

2-1. DISASSEMBLY

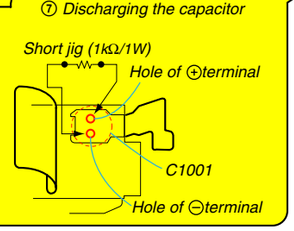


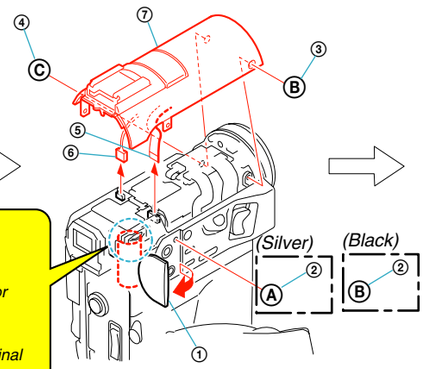


① Screw (M1.7x2.5) silver(Silver)
① Screw (M1.7x2.5) black(Black)
② Open the LCD panel.
③ Screw (M1.7x4) silver(Silver)
③ Screw (M1.7x4) black(Black)
④ Three screws (M1.7x4) silver(Silver)
④ Three screws (M1.7x4) black(Black)
⑤ Cabinet (rear) assembly

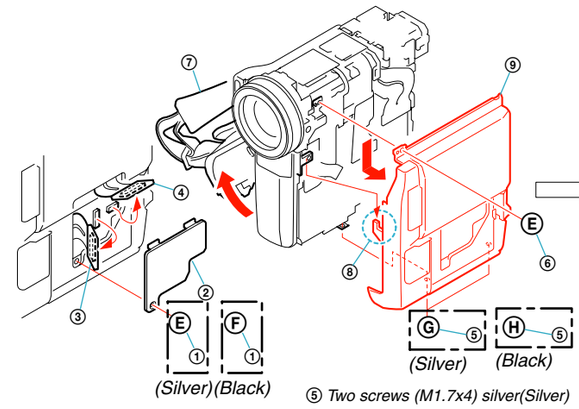
Caution

⑦ Discharging the capacitor





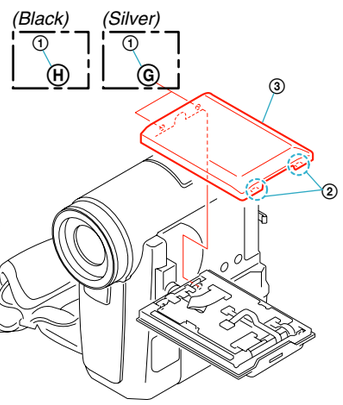
① Open the jack cover.
② Screw (M1.7x4) silver(Silver)
② Screw (M1.7x4) black(Black)
③ Screw (M1.7x4) black
④ Screw (M1.7x2.5) black
⑤ FP-991 flexible board (10P)
⑥ From microphone unit (4P)
⑦ Top cabinet block assembly



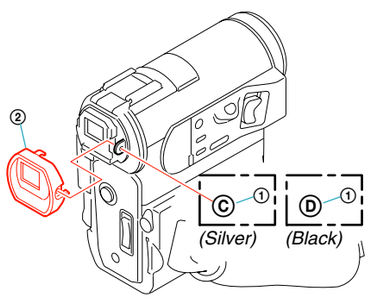
① Screw (M1.7x2.5) silver(Silver)
① Screw (M1.7x2.5) black(Black)
② BT lid
③ From CR-048 board (60P)
④ From VP-060 board (40P)

⑤ Two screws (M1.7x4) silver(Silver)
⑤ Two screws (M1.7x4) black(Black)
⑥ Screw (M1.7x2.5) black
⑦ Open the cassette lid
⑧ Craw
⑨ Remove the cabinet (R) section direction of the arrow.

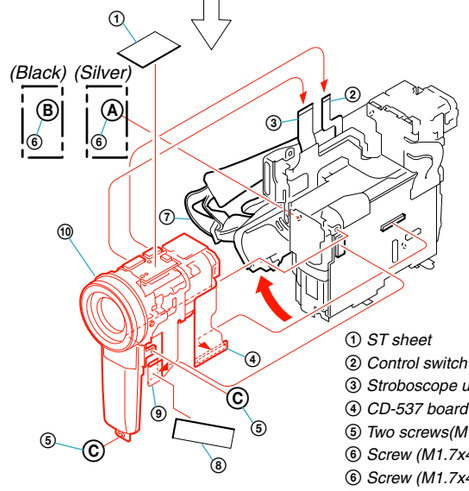
Cabinet (R) section (See page 2-3.)



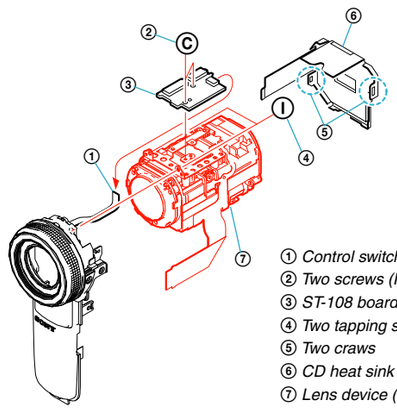
① Two screws (M1.7x4) silver(Silver)
① Two screws (M1.7x4) black(Black)
② Two Claws
③ LCD cabinet (R), P



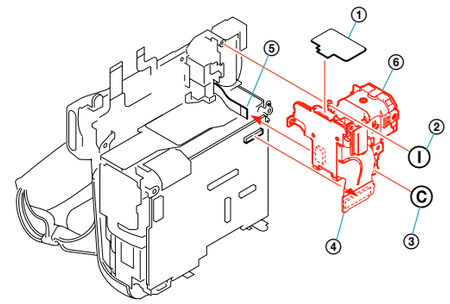
① Screw (M1.7x2.5) silver(Silver)
① Screw (M1.7x2.5) black(Black)
② Eye cup



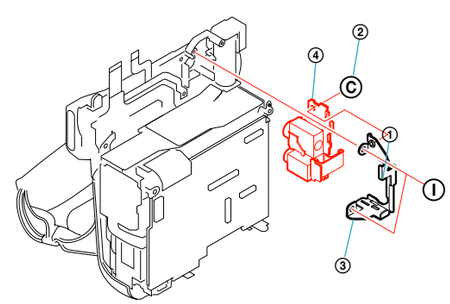
① ST sheet
② Control switch block (FK7450) (23P)
③ Stroboscope unit (FL7450) (33P)
④ CD-537 board (80P)
⑤ Two screws(M1.7x2.5) black
⑥ Screw (M1.7x4) silver(Silver)
⑥ Screw (M1.7x4) black(Black)
⑦ Open the cassette lid.
⑧ Peel off the tape (A).
⑨ From lens device (33P)
⑩ FK block assembly



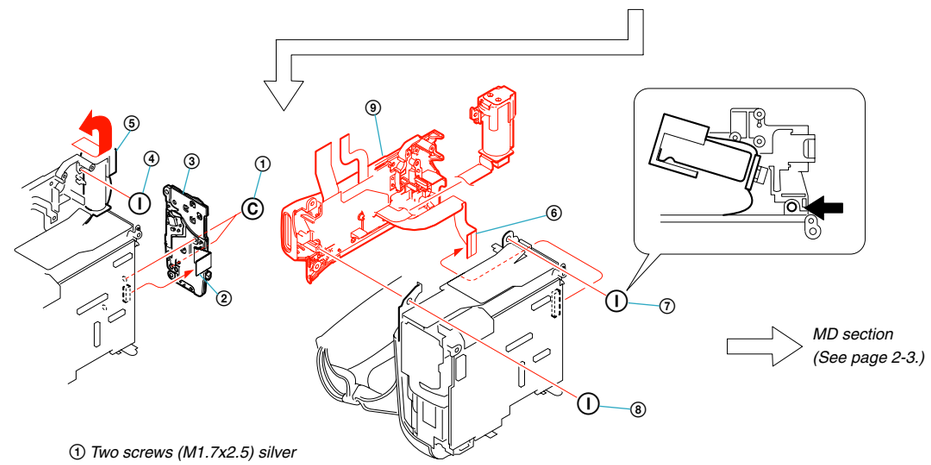
① Control switch block (MF7450) (6P)
② Two screws (M1.7x2.5) silver
③ ST-108 board
④ Two tapping screws (M1.7x3.5) black
⑤ Two craws
⑥ CD heat sink
⑦ Lens device (LSV-940A), CD-537 board



① Harness protection sheet
② Tapping screw (M1.7x3.5) black
③ Screw (M1.7x2.5) silver
④ SE-151 board (60P)
⑤ FP-995 flexible board (12P)
⑥ EVF section



① Two tapping screws (M1.7x3.5) black
② Screw (M1.7x2.5) silver
③ JK frame
④ FP-995 flexible board



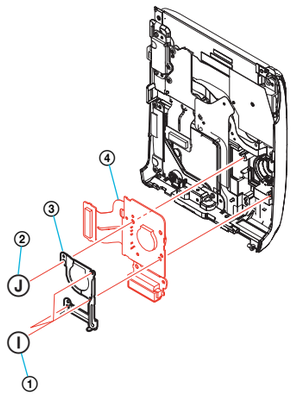
① Two screws (M1.7x2.5) silver
② Control switch block (PS7450) (14P)
③ Control switch block (PS7450)
④ Tapping screw (M1.7x3.5) black
⑤ Remove the condenser in the direction of the arrow.
⑥ Control switch block (FK7450) (26P)
⑦ Tapping screw (M1.7x3.5) black
⑧ Tapping screw (M1.7x3.5) black
⑨ Control switch block (PS7450), flash unit

MD section (See page 2-3.)

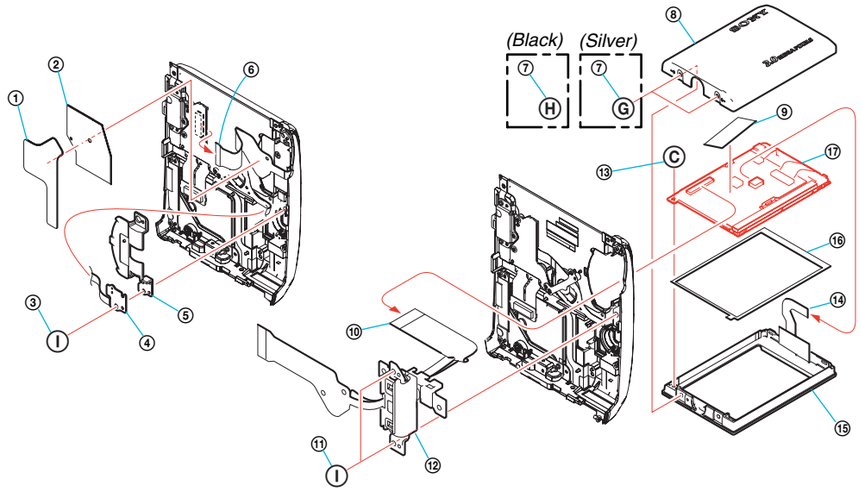
Ⓐ Screw M1.7x4 2-187-345-11	Ⓑ Screw M1.7x4 3-084-817-31	Ⓒ Screw M1.7x2.5 3-989-735-01	Ⓓ Screw M1.7x2.5 3-080-198-11	
Ⓔ Screw M1.7x2.5 3-263-235-01	Ⓕ Screw M1.7x2.5 3-084-817-11	Ⓖ Screw M1.7x4 3-989-735-31	Ⓗ Screw M1.7x4 3-080-198-31	Ⓘ Tapping screw M1.7x3.5 3-080-204-01

□ Silver
■ Black

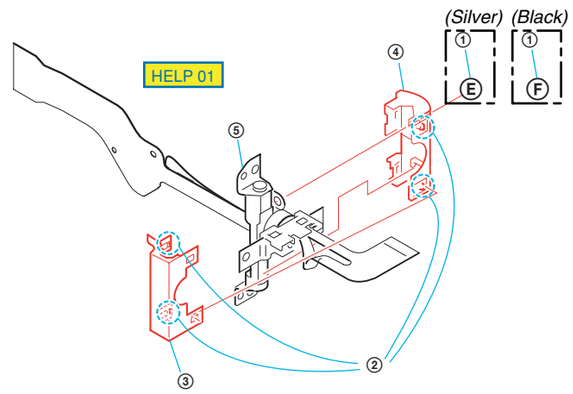
2. DISASSEMBLY



① *Three tapping screws (1.7x3.5) black*
② *Tapping screws (1.7x5) black*
③ *CR frame*
④ *CR-048 board*



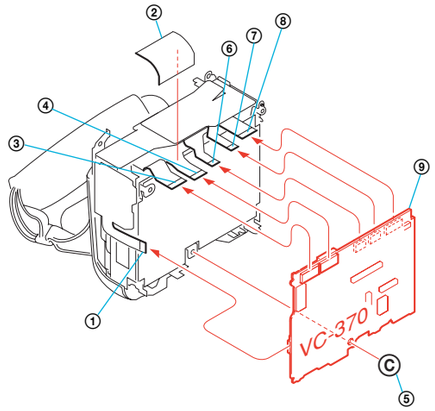
① *SP sheet*
② *Flexible P sheet*
③ *Tapping screw (M1.7x3.5) black*
④ *FP-993 flexible board*
⑤ *Hinge blind*
⑥ *FP-994 flexible board (24P)*
⑦ *Two screws (M1.7x4) silver(Silver)*
⑦ *Two screws (M1.7x4) black(Black)*
⑧ *P cabinet (R), P*
⑨ *Tape (A)*
⑩ *FP-994 flexible board (22P)*
⑪ *Two tapping screws (M1.7x3.5) black*
⑫ *Hinge section*
⑬ *Screw (M1.7x2.5) silver*
⑭ *Control switch block (SB7450) (6P)*
⑮ *P cabinet (L)*
⑯ *TP cushion*
⑰ *PD-225 board, LCD unit (ACX528AKQ-J), Light guide plate block.*



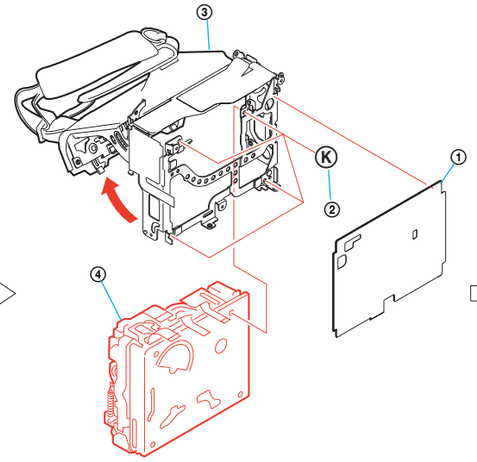
① *Screw (M1.7x2.5) silver (Silver)*
① *Screw (M1.7x2.5) black (Black)*
② *Four claws*
③ *Front hinge cover*
④ *Hinge cover (rear)*
⑤ *FP-994 flexible board, Hinge section*

Ⓐ Screw M1.7x4 2-187-345-11	Ⓑ Screw M1.7x4 3-084-817-31	Ⓒ Screw M1.7x2.5 3-989-735-01	Ⓓ Screw M1.7x2.5 3-080-198-11	Ⓔ Screw M1.7x2.5 3-263-235-01	Ⓕ Screw M1.7x2.5 3-084-817-11
Ⓖ Screw M1.7x4 3-989-735-31	Ⓗ Screw M1.7x4 3-080-198-31	Ⓘ Tapping screw M1.7x3.5 3-080-204-01	Ⓙ Tapping screw M1.7x5 3-078-890-21	Ⓚ Screw M1.4x1.5 3-062-214-01	Ⓛ Tapping screw M1.7x3.5 3-078-890-01

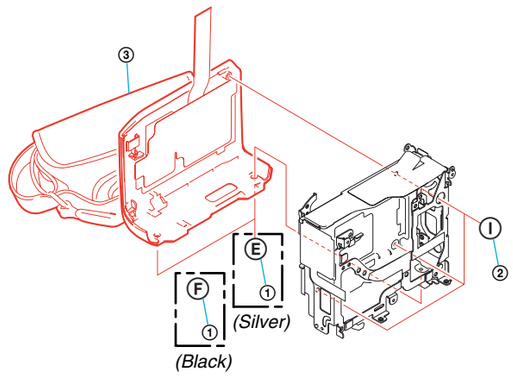
□ *Silver*
■ *Black*



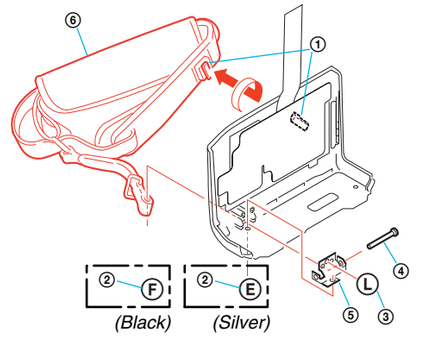
① *FP-996 flexible board (12P)*
② *MD flexible sheet*
③ *to ④ ((27P), (27P)) of VC-370 board.*
⑤ *Screw (M1.7x2.5) silver*
⑥ *to ⑧ ((10P), (10P), (33P)) of VC-370 board.*
⑨ *VC-370 board*



① *MD sheet*
② *Four screws (M1.4x1.5) silver*
③ *Open the cassette lid.*
④ *Mechanism deck*

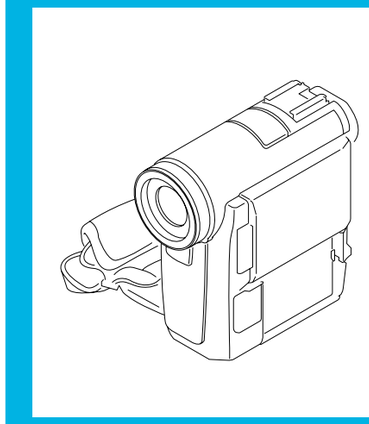


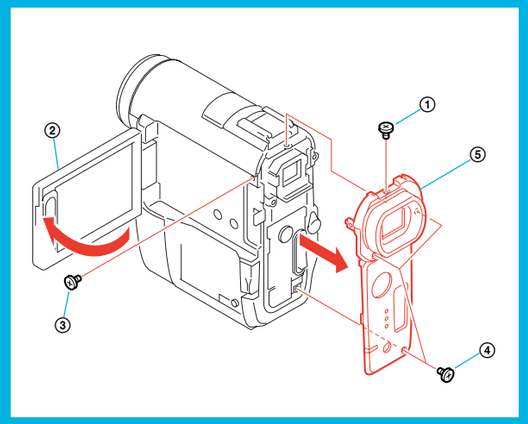
① *Two screws (M1.7x2.5) black(Black)*
① *Two screws (M1.7x2.5) silver(Silver)*
② *Three tapping screws (M1.7x3.5) black*
③ *Cabinet (G) section*

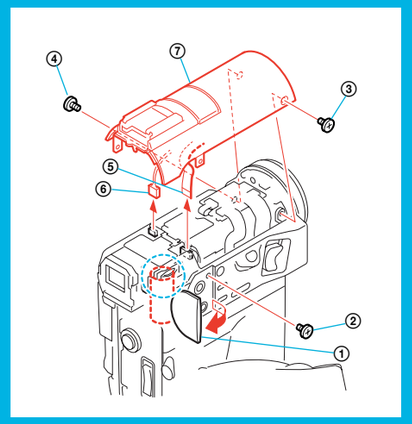


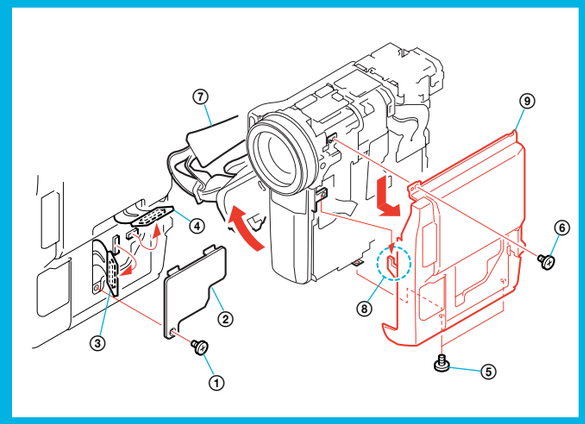
① *Release the lock*
② *Screw (M1.7x2.5) black(Black)*
② *Screw (M1.7x2.5) silver(Silver)*
③ *Tapping screw (M1.7x3.5) black*
④ *GB shaft*
⑤ *GB sheet metal*
⑥ *Grip belt assembly*

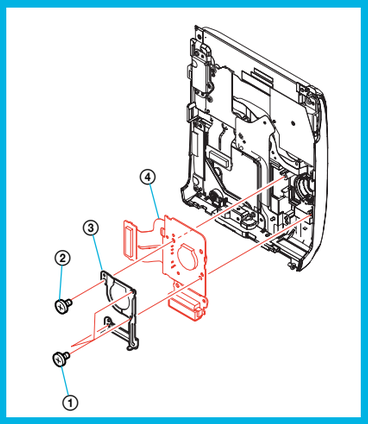
2-2. SERVICE POSITION

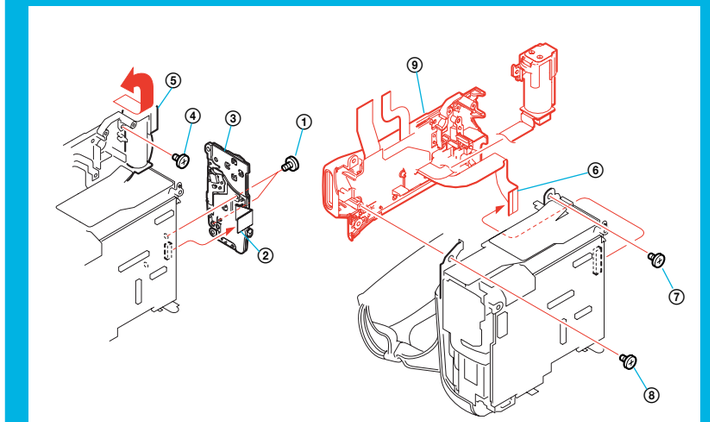


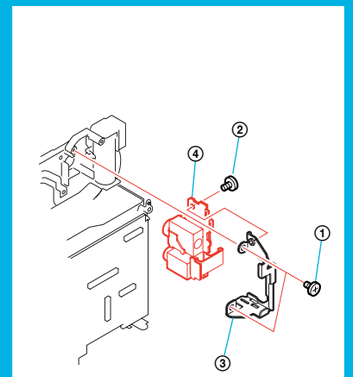


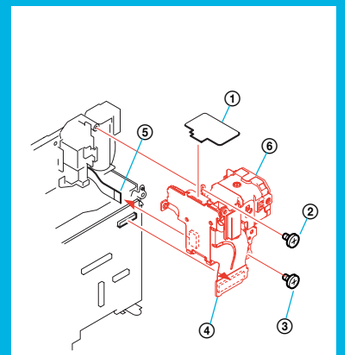


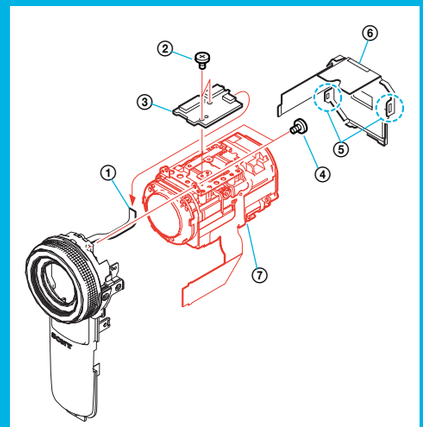


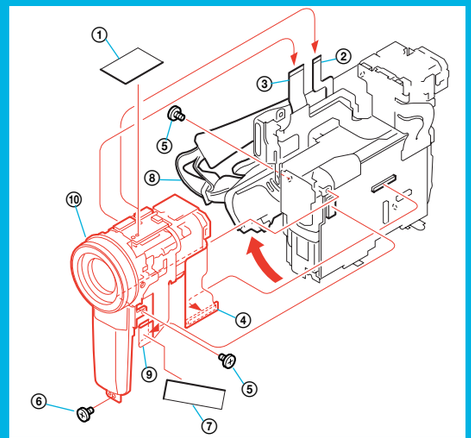


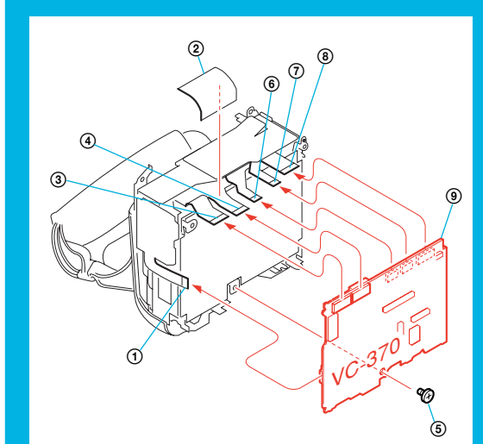


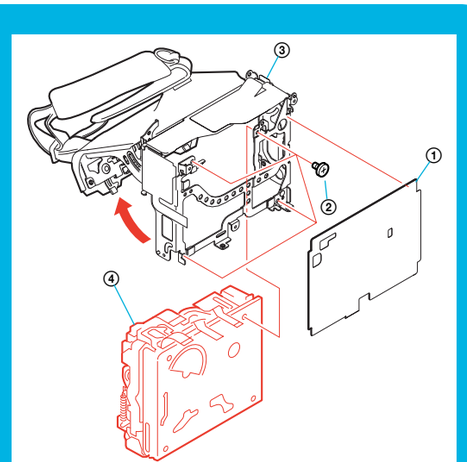












[SERVICE POSITION TO CHECK THE VTR SECTION]
Connection to Check the VTR Section (page 2-7)

[SERVICE POSITION TO CHECK THE VTR SECTION]

Connection to Check the VTR Section

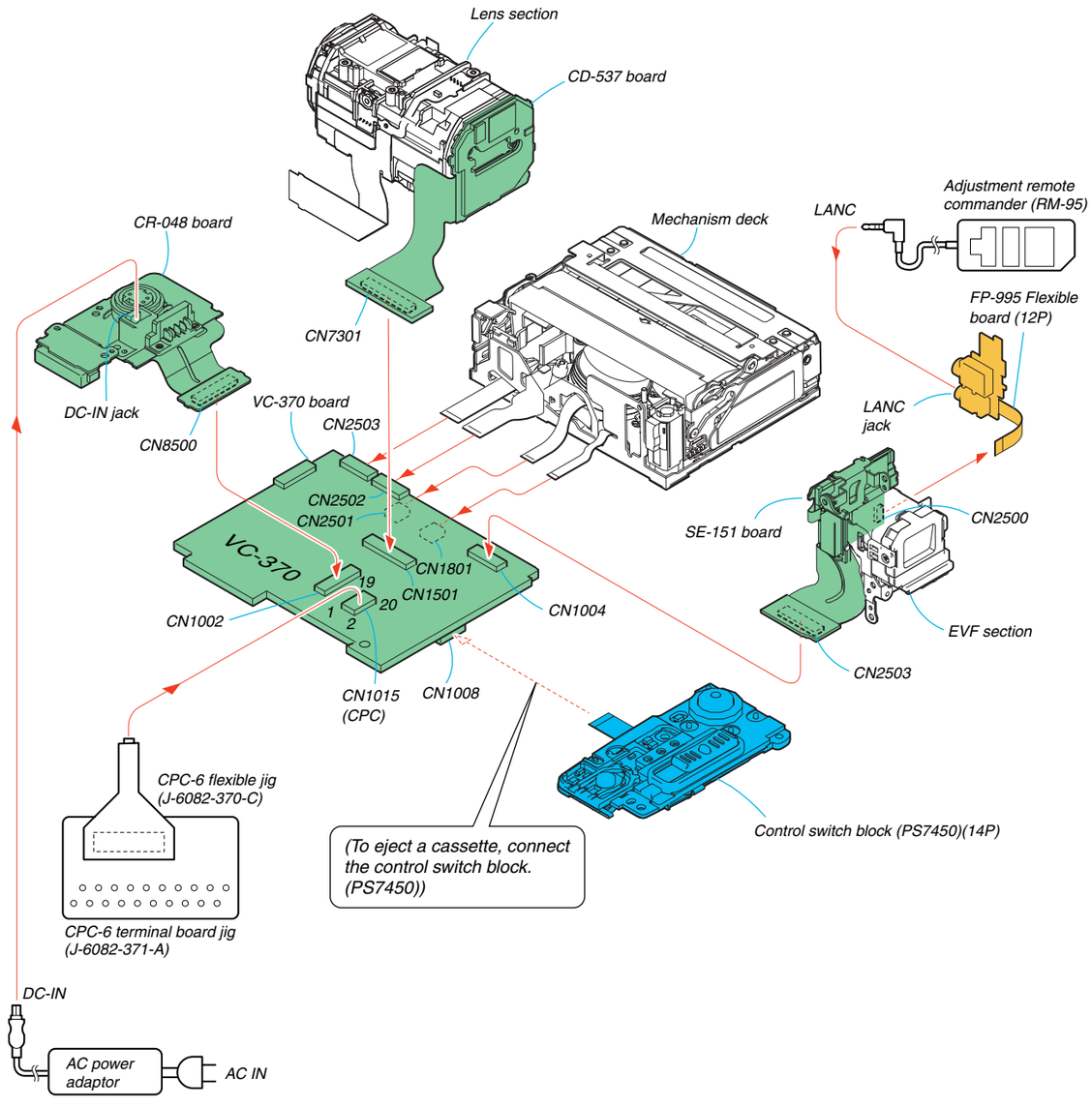
To check the VTR section, set the VTR to the "Forced VTR power ON" mode.
Operate the VTR functions using the adjustment remote commander (with the HOLD switch set in the OFF position.)

Setting the "Forced VTR Power ON" mode

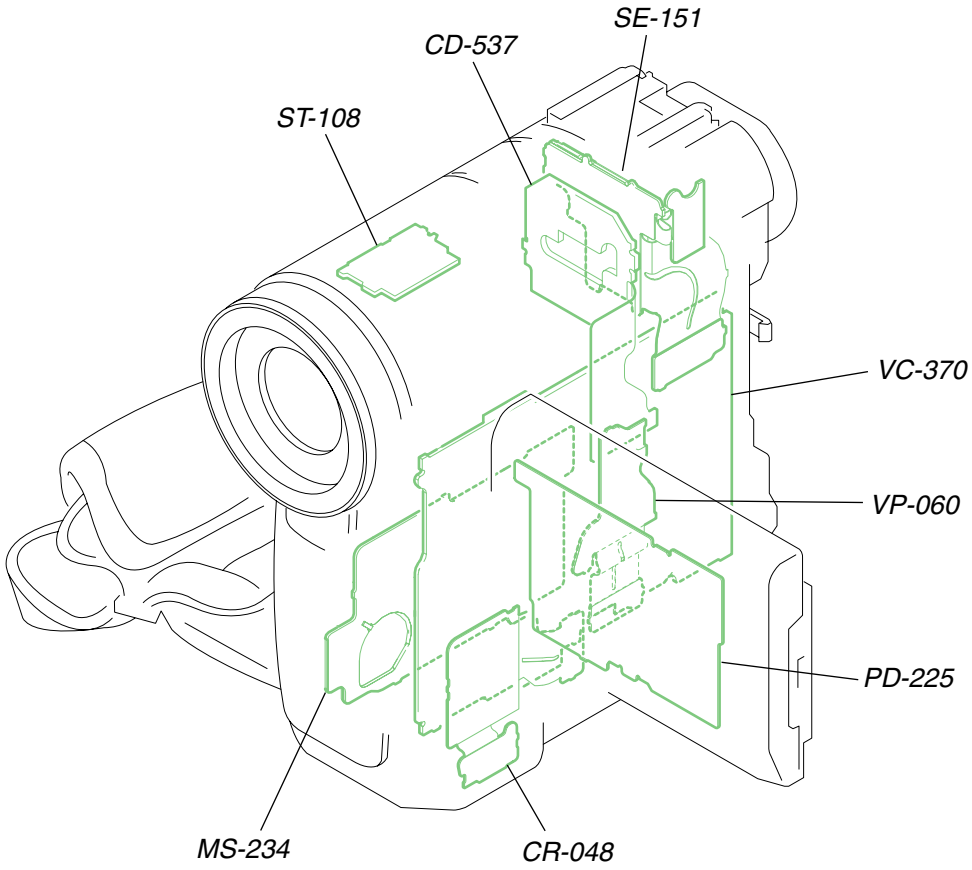
1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: A, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.

Exiting the "Forced VTR Power ON" mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: A, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.



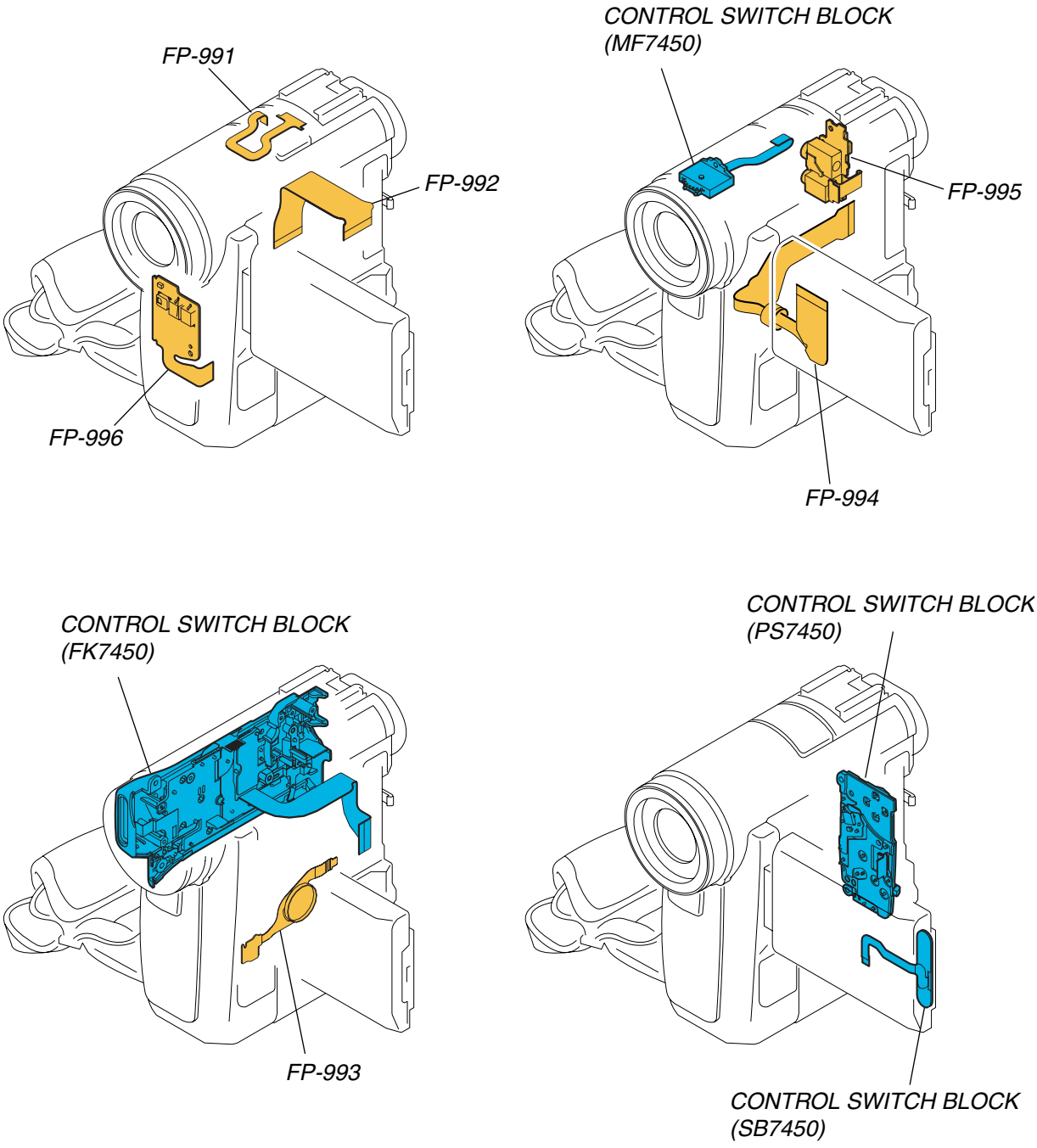
2-3. CIRCUIT BOARDS LOCATION



NAME	FUNCTION
CR-048	CRADLE CONNECTOR
SE-151	PITCH/YAW SENSOR AMP
FP-995	JACK
VP-060	RELAY, KEY
FP-993	RELAY
FP-994	RELAY
MS-234	MIC AMP
ST-108	FLASH DRIVE
PD-225	RGB DRIVE, TG
FP-996	SIRCS, NIGHTSHOT
CD-537	CCD IMAGER, TG
VC-370	CAMERA A/D CONV., LENS DRIVE, CAMERA PROCESS, MPEG MOVIE/DIGITAL STILL PROCESS, HI/DIGITAL STILL CONTROL, 32Mbit FLASH MEMORY, 64Mbit SDRAM, DV/RF SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, VIDEO I/O, A/D CONV., DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, AUDIO I/O, CONNECTOR, EVF VIDEO, DC/DC CONVERTER

2-4. FLEXIBLE BOARDS LOCATION

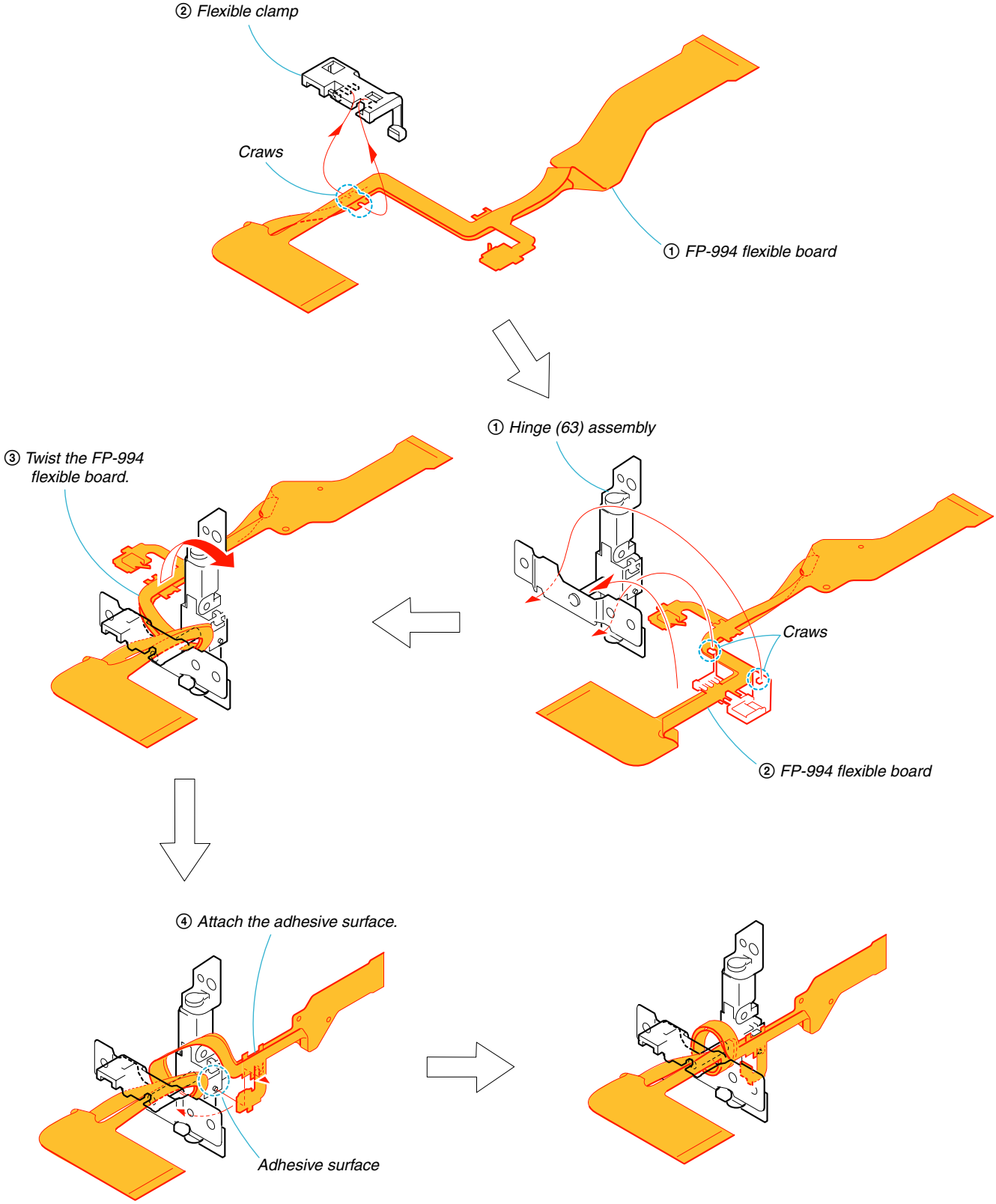
The flexible boards contained in the lens block is not shown.



HELP

Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

HELP 01



3. BLOCK DIAGRAMS

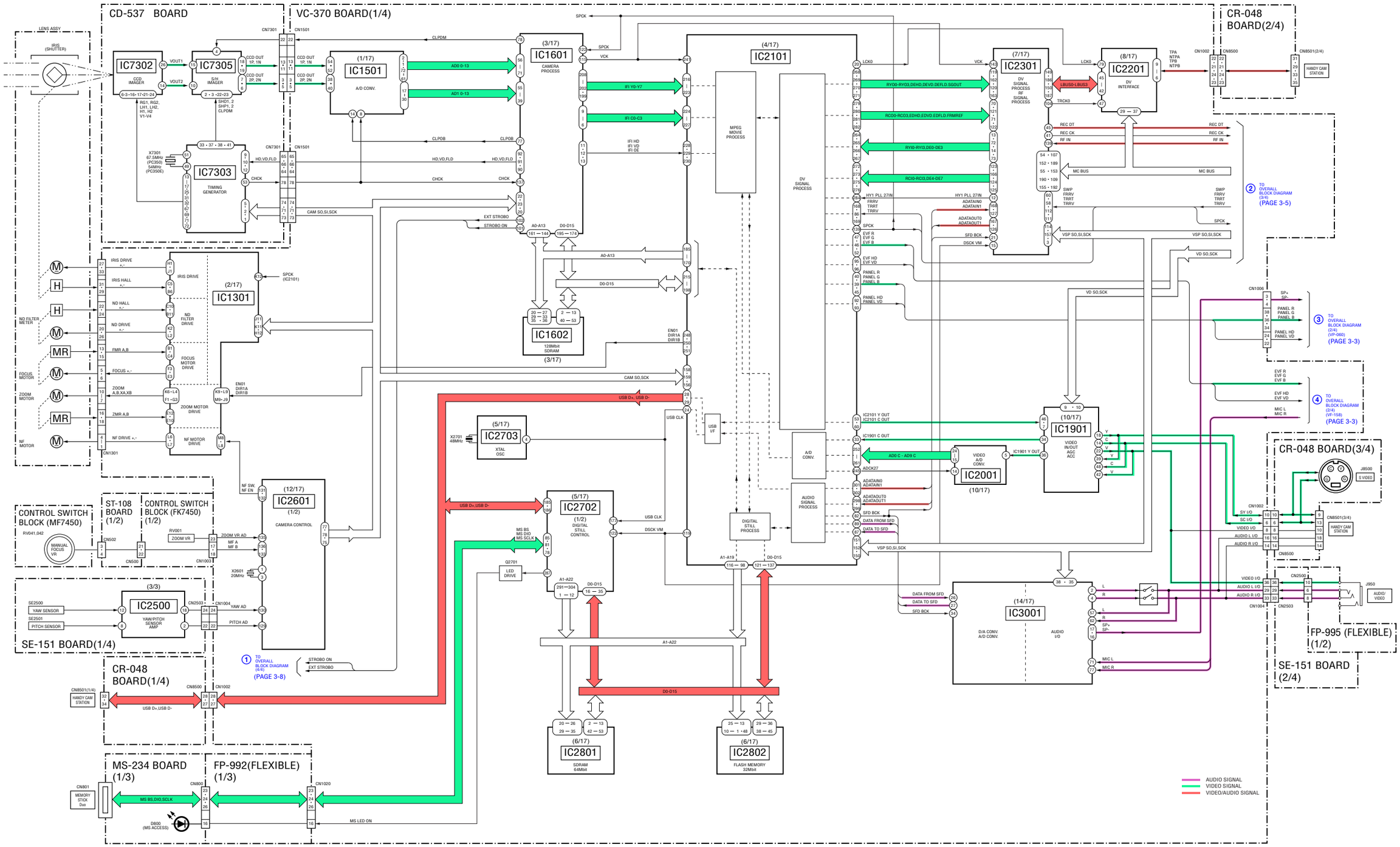
Link

OVERALL BLOCK DIAGRAM (1/4)	POWER BLOCK DIAGRAM (1/2)
OVERALL BLOCK DIAGRAM (2/4)	POWER BLOCK DIAGRAM (2/2)
OVERALL BLOCK DIAGRAM (3/4)	
OVERALL BLOCK DIAGRAM (4/4)	

SECTION 3
BLOCK DIAGRAMS

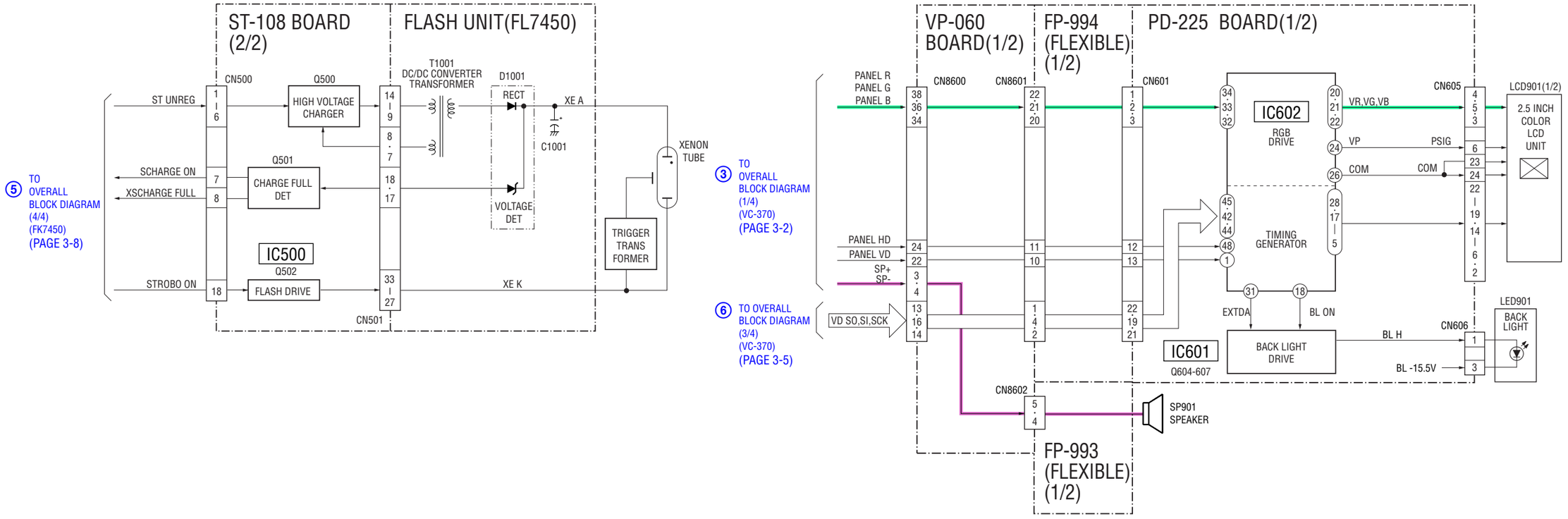
3-1. OVERALL BLOCK DIAGRAM (1/4)

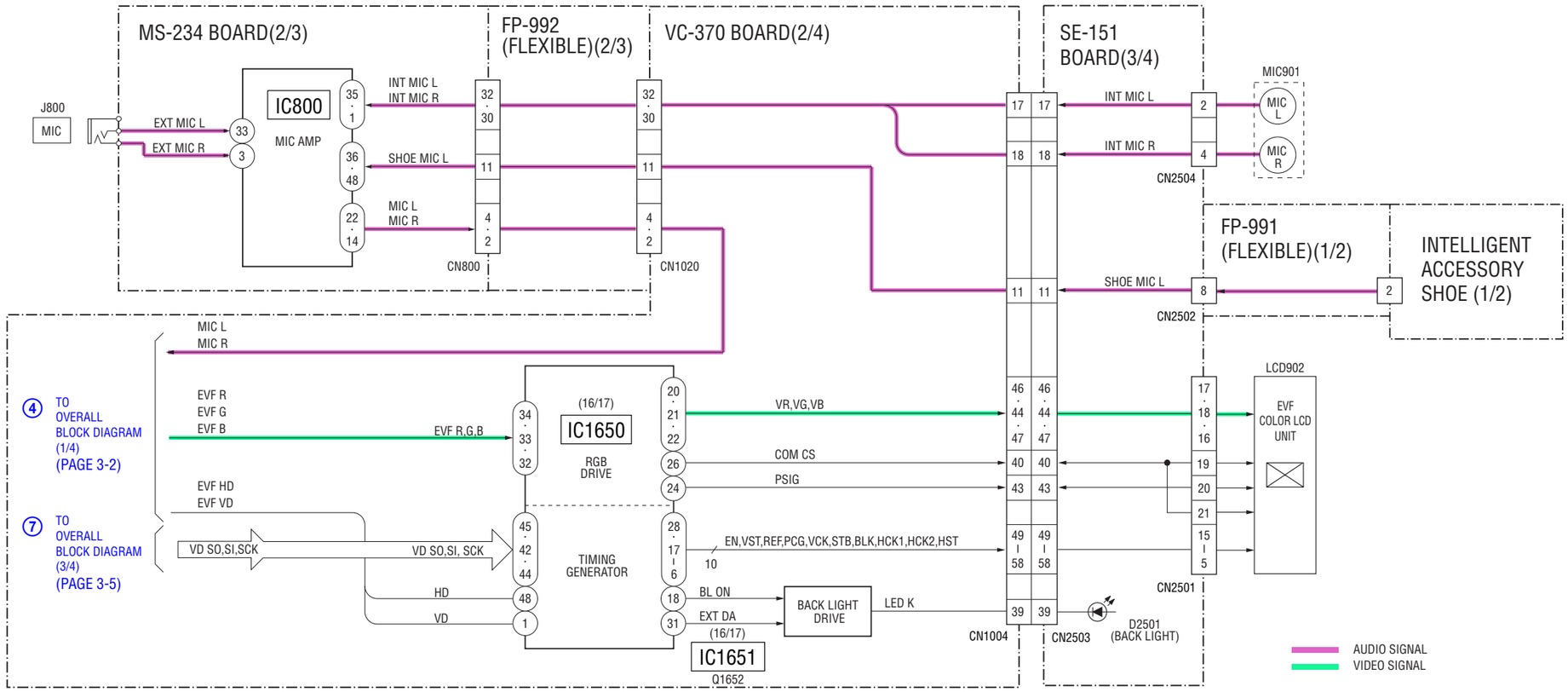
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3-2. OVERALL BLOCK DIAGRAM (2/4)

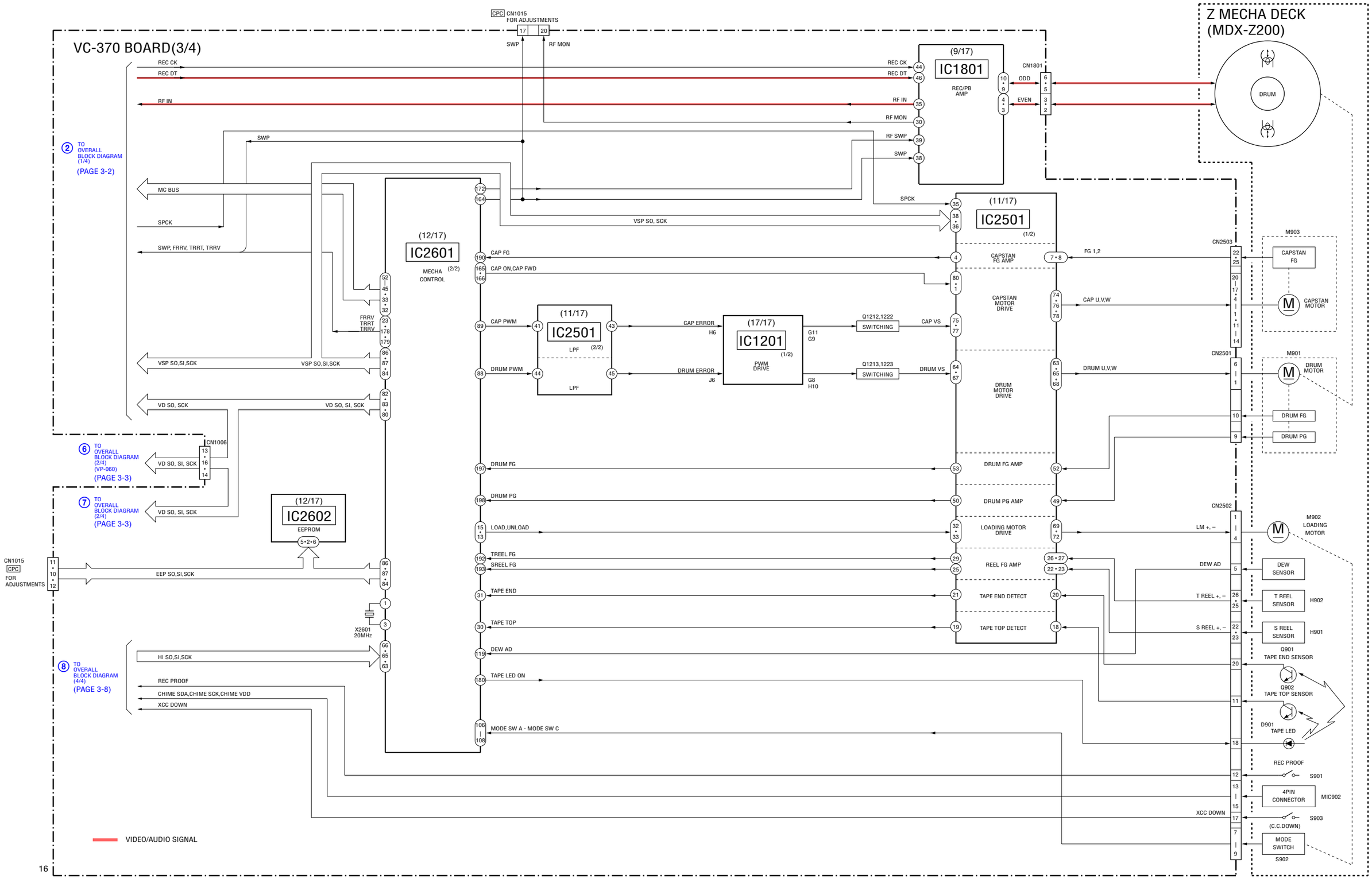
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.





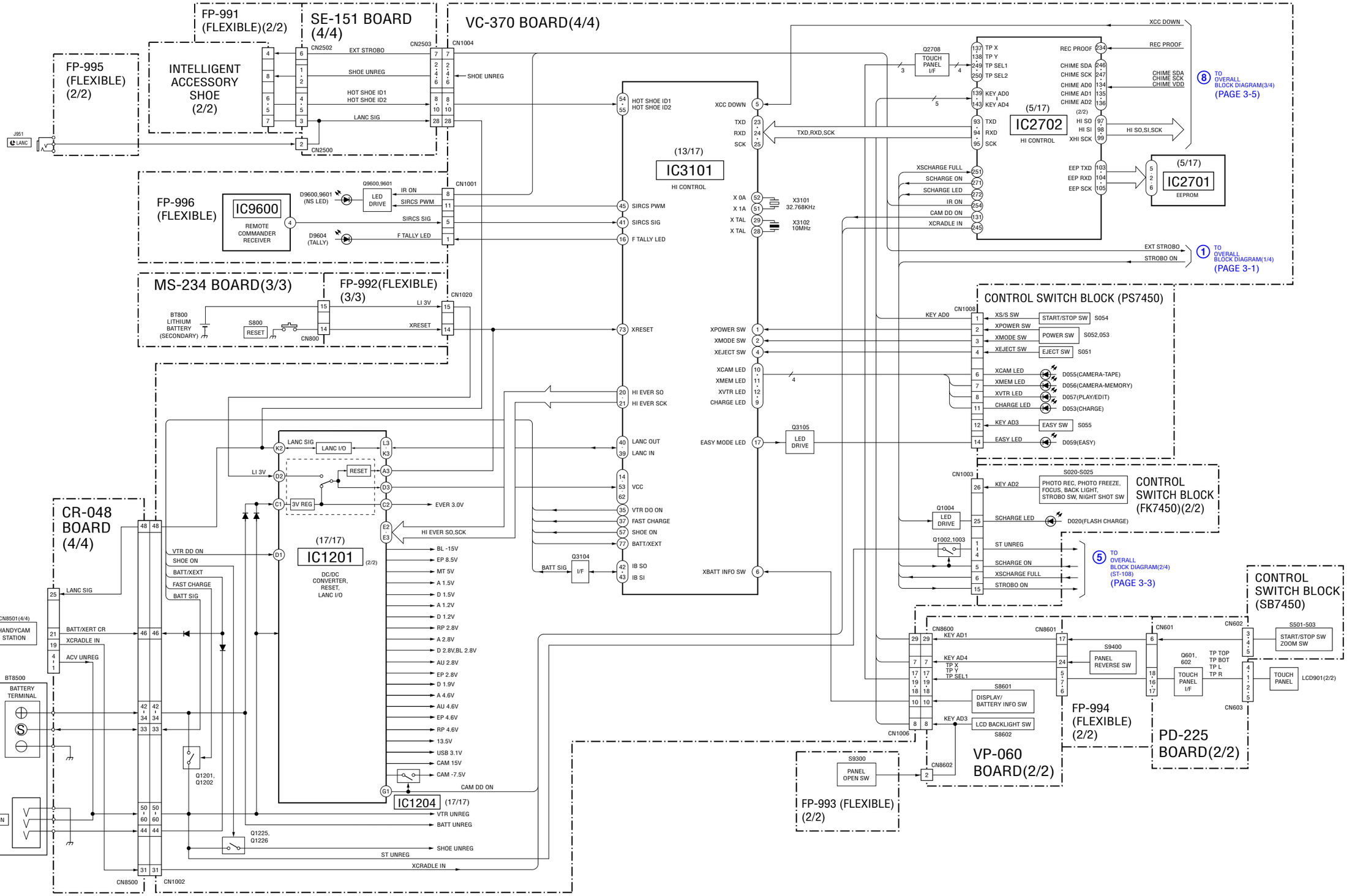
3-3. OVERALL BLOCK DIAGRAM (3/4)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

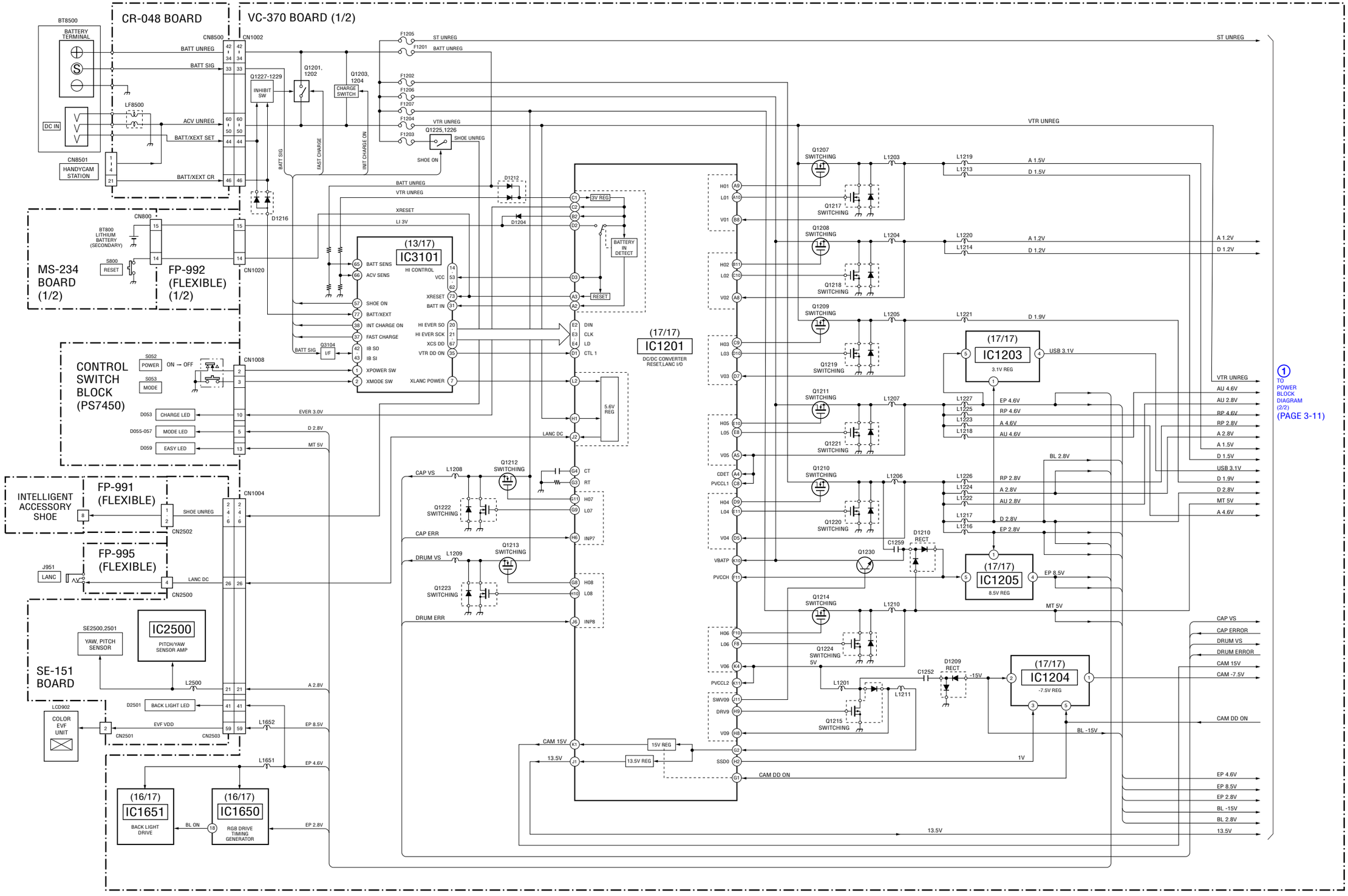


3-4. OVERALL BLOCK DIAGRAM (4/4)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

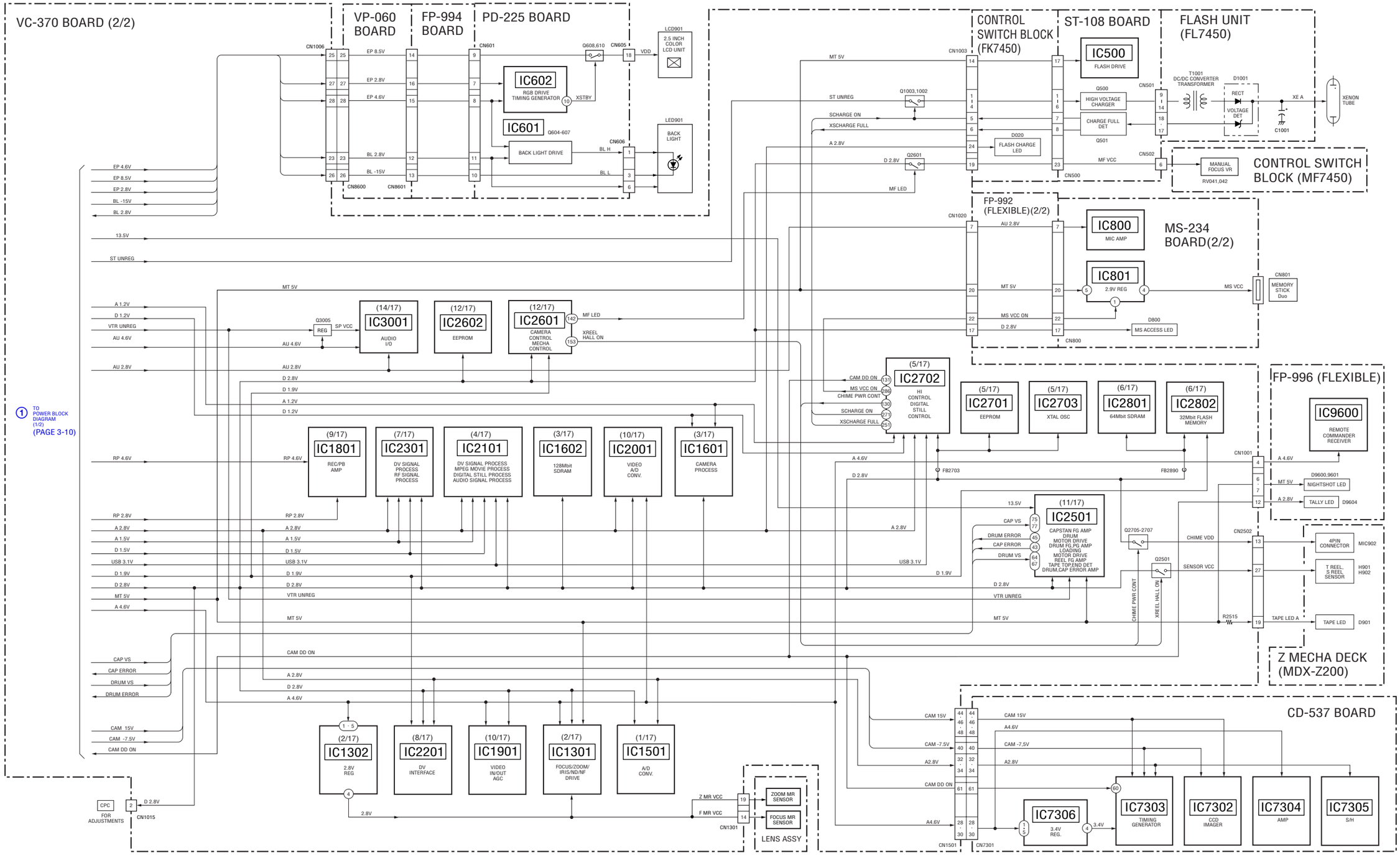


3-5. POWER BLOCK DIAGRAM (1/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



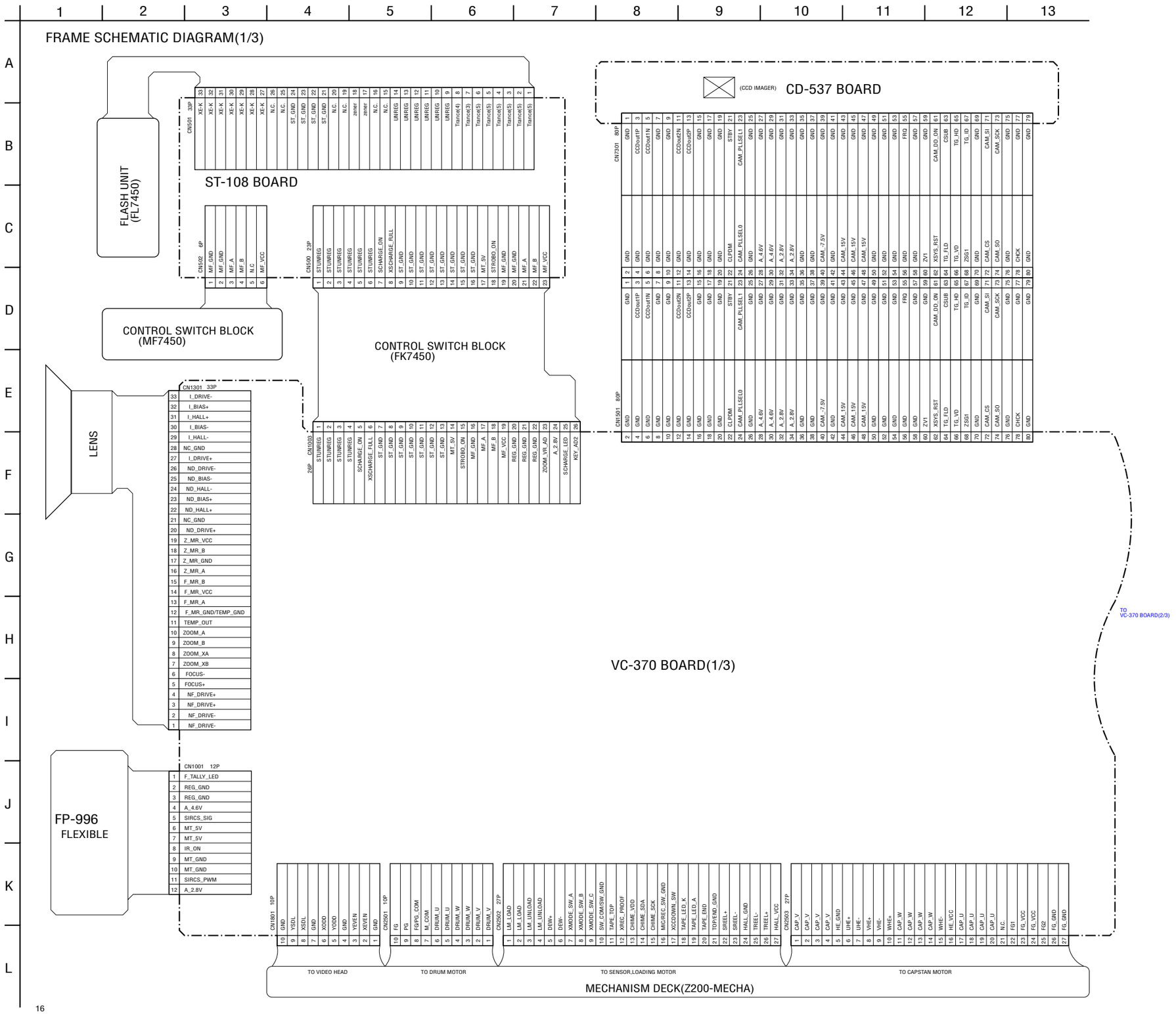
3-6. POWER BLOCK DIAGRAM (2/2)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/3)



FRAME SCHEMATIC DIAGRAM (2/3)

FRAME SCHEMATIC DIAGRAM(2/3)

TO
VC-370 BOARD(1/3)

VC-370 BOARD(2/3)

CN1020 33P		CN800 33P
MIC_GND	1	1 MIC_GND
MIC_R	2	2 MIC_R
MIC_GND	3	3 MIC_GND
MIC_L	4	4 MIC_L
MIC_GND	5	5 MIC_GND
MIC_IN	6	6 MIC_IN
AU_2.8V	7	7 AU_2.8V
ZOOM_MIC_CONT	8	8 ZOOM_MIC_CONT
MIC_MONO	9	9 MIC_MONO
SHOE_MIC_GND	10	10 SHOE_MIC_GND
SHOE_MIC_L	11	11 SHOE_MIC_L
SHOE_MIC_GND	12	12 SHOE_MIC_GND
REG_GND	13	13 REG_GND
XRESET	14	14 XRESET
LI_3.0V	15	15 LI_3.0V
MS_LED_ON	16	16 MS_LED_ON
D_2.8V	17	17 D_2.8V
REG_GND	18	18 REG_GND
REG_GND	19	19 REG_GND
MT_5V	20	20 MT_5V
REG_GND	21	21 REG_GND
MS_VCC_ON	22	22 MS_VCC_ON
MS_BS	23	23 MS_BS
MS_DIO	24	24 MS_DIO
MS_INSERT	25	25 MS_INSERT
MS_SCLK	26	26 MS_SCLK
REG_GND	27	27 REG_GND
REG_GND	28	28 REG_GND
MIC_GND	29	29 MIC_GND
INT_MIC_R	30	30 INT_MIC_R
MIC_GND	31	31 MIC_GND
INT_MIC_L	32	32 INT_MIC_L
MIC_GND	33	33 MIC_GND

FP-992
FLEXIBLE

MS-234 BOARD

J800
MIC

CN801 10P

10	REG_GND
9	MS_VCC
8	MS_SCLK
7	N.C.
6	MS_INSERT
5	N.C.
4	MS_DIO
3	N.C.
2	MS_BS
1	REG_GND

MOMORY STICK DUO

INTELLIGENT ACCESORY SHOE

MIC901

FP-991
FLEXIBLE

CN2502 10P: 10 SHOE_UNREG_GND, 9 SHOE_UNREG_GND, 8 SHOE_MIC_L, 7 SHOE_MIC_GND, 6 EXT_STROBO, 5 HOTSHOE_ID2, 4 HOTSHOE_ID1, 3 LANC_SIG, 2 SHOE_UNREG, 1 SHOE_UNREG

CN2504 4P: 4 INT_MIC_R, 3 INT_MIC_GND, 2 INT_MIC_L, 1 INT_MIC_GND

J951
LANC

J950
A/V

FP-995
FLEXIBLE

CN2500 12P	
1	XLANC_JACK_IN
2	LANC_SIG
3	REG_GND
4	LANC_DC
5	REG_GND
6	AUDIO_L_I/O
7	REG_GND
8	AUDIO_R_I/O
9	REG_GND
10	VIDEO_I/O
11	REG_GND
12	JACK_AD

CPC (FOR CHECK)

CN1015 20P			
2	D_2.8V	N.C.	1
4	N.C.	N.C.	3
6	REG_GND	N.C.	5
8	XCS_MC_FLASH	MD2	7
10	EEP_SI	XSYS_RST	9
12	EEP_SCK	EEP_SO	11
14	REC_CRRT0	REC_CRRT1	13
16	XCS_EEP	REG_GND	15
18	FRRV	SWP	17
20	RF_MON	REG_GND	19

CN1008 14P

XS/S_SW	1
XPOWER_SW	2
XMODE_SW	3
XEJECT_SW	4
D_2.8V	5
XCAM_LED	6
XMEM_LED	7
XVTR_LED	8
REG_GND	9
EVER_3.0V	10
CHARGE_LED	11
KEY_AD3	12
EASY_LED_VDD	13
EASY_LED	14

CONTROL SWITCH BLOCK
(PS7450)

LCD902

CN2501 21P: 21 EVF_COM_CS, 20 EVF_PSIG, 19 CS, 18 EVF_VG, 17 EVF_VR, 16 EVF_VB, 15 EVF_PCG, 14 EVF_EN, 13 EVF_VCK, 12 EVF_VST, 11 EVF_STB, 10 EVF_REF, 9 EVF_BLK, 8 RGT, 7 EVF_HCK1, 6 EVF_HCK2, 5 EVF_HST, 4 VSSG, 3 VSS, 2 EVF_VDD, 1 N.C.

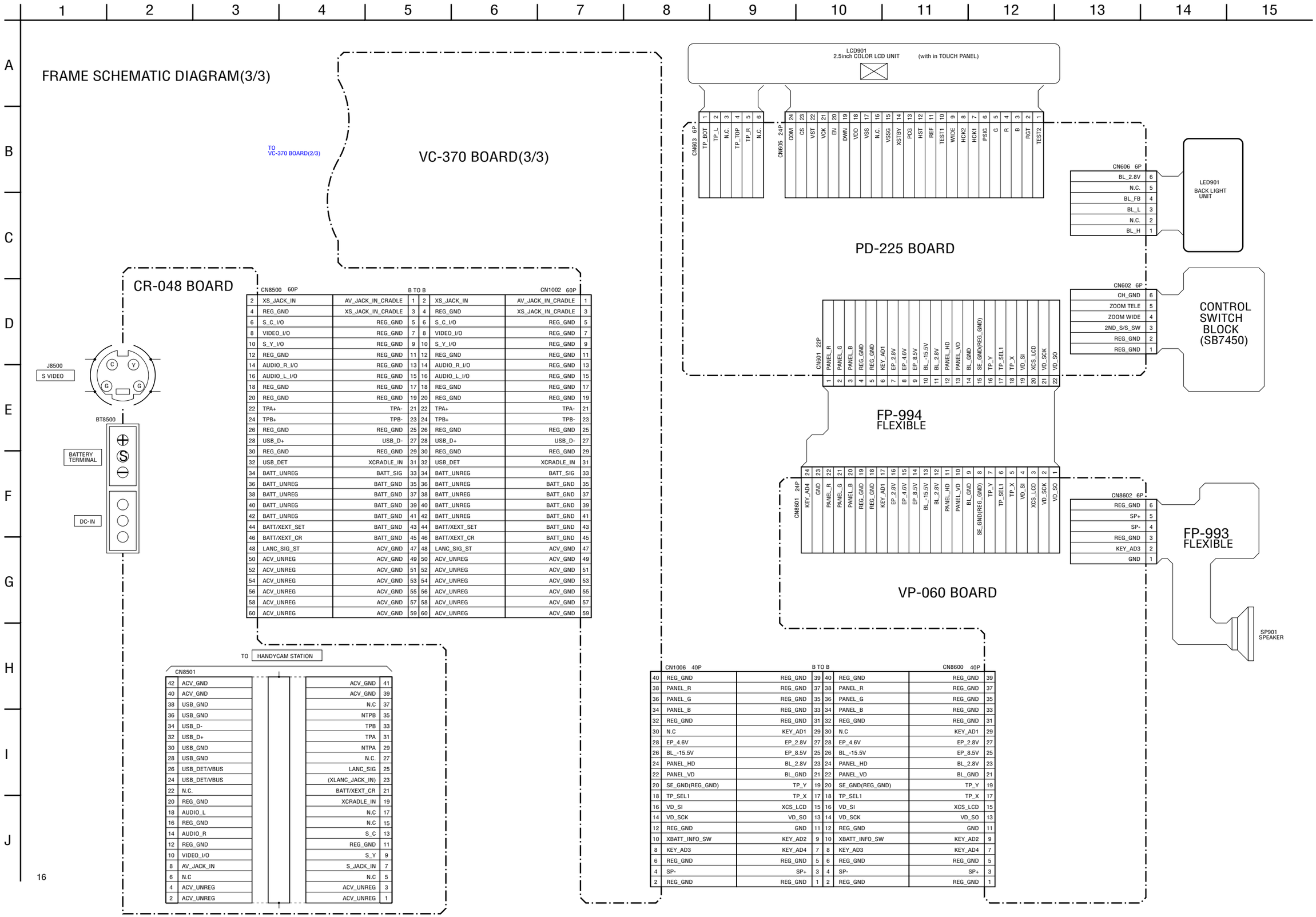
SE-151 BOARD

B TO B

CN2503 60P			CN1004 60P		
1 SHOE_UNREG_GND	SHOE_UNREG	2	1 SHOE_UNREG_GND	SHOE_UNREG	2
3 SHOE_UNREG_GND	SHOE_UNREG	4	3 SHOE_UNREG_GND	SHOE_UNREG	4
5 SHOE_UNREG_GND	SHOE_UNREG	6	5 SHOE_UNREG_GND	SHOE_UNREG	6
7 EXT_STROBO	HOTSHOE_ID1	8	7 EXT_STROBO	HOTSHOE_ID1	8
9 SHOE_MIC_GND	HOTSHOE_ID2	10	9 SHOE_MIC_GND	HOTSHOE_ID2	10
11 SHOE_MIC_L	SHOE_MIC_GND	12	11 SHOE_MIC_L	SHOE_MIC_GND	12
13 SHOE_MIC_GND	SHOE_MIC_GND	14	13 SHOE_MIC_GND	SHOE_MIC_GND	14
15 MIC_GND	MIC_GND	16	15 MIC_GND	MIC_GND	16
17 INT_MIC_L	INT_MIC_R	18	17 INT_MIC_L	INT_MIC_R	18
19 MIC_GND	MIC_GND	20	19 MIC_GND	MIC_GND	20
21 A_2.8V	PITCH_AD	22	21 A_2.8V	PITCH_AD	22
23 VST_C_RESET	YAW_AD	24	23 VST_C_RESET	YAW_AD	24
25 JACK_AD	LANC_DC	26	25 JACK_AD	LANC_DC	26
27 REG_GND	LANC_SIG	28	27 REG_GND	LANC_SIG	28
29 AUDIO_L_I/O	REG_GND	30	29 AUDIO_L_I/O	REG_GND	30
31 REG_GND	XLANC_JACK_IN	32	31 REG_GND	XLANC_JACK_IN	32
33 AUDIO_R_I/O	REG_GND	34	33 AUDIO_R_I/O	REG_GND	34
35 REG_GND	VIDEO_I/O	36	35 REG_GND	VIDEO_I/O	36
37 EVF_BL_GND	REG_GND	38	37 EVF_BL_GND	REG_GND	38
39 LED_K	EVF_COM_CS	40	39 LED_K	EVF_COM_CS	40
41 EP_4.6V	REG_GND	42	41 EP_4.6V	REG_GND	42
43 EVF_PSIG	EVF_VG	44	43 EVF_PSIG	EVF_VG	44
45 REG_GND	EVF_VR	46	45 REG_GND	EVF_VR	46
47 EVF_VB	REG_GND	48	47 EVF_VB	REG_GND	48
49 EVF_PCG	EVF_EN	50	49 EVF_PCG	EVF_EN	50
51 EVF_VCK	EVF_VST	52	51 EVF_VCK	EVF_VST	52
53 EVF_STB	EVF_REF	54	53 EVF_STB	EVF_REF	54
55 EVF_HCK1	EVF_HCK2	56	55 EVF_HCK1	EVF_HCK2	56
57 EVF_HST	EVF_BLK	58	57 EVF_HST	EVF_BLK	58
59 VDD	EVF_GND	60	59 VDD	EVF_GND	60

TO
VC-370 BOARD(3/3)

FRAME SCHEMATIC DIAGRAM (3/3)



CN8500 60P			B TO B			CN1002 60P	
2	XS_JACK_IN	AV_JACK_IN_CRADLE	1	2	XS_JACK_IN	AV_JACK_IN_CRADLE	1
4	REG_GND	XS_JACK_IN_CRADLE	3	4	REG_GND	XS_JACK_IN_CRADLE	3
6	S_C_I/O	REG_GND	5	6	S_C_I/O	REG_GND	5
8	VIDEO_I/O	REG_GND	7	8	VIDEO_I/O	REG_GND	7
10	S_Y_I/O	REG_GND	9	10	S_Y_I/O	REG_GND	9
12	REG_GND	REG_GND	11	12	REG_GND	REG_GND	11
14	AUDIO_R_I/O	REG_GND	13	14	AUDIO_R_I/O	REG_GND	13
16	AUDIO_L_I/O	REG_GND	15	16	AUDIO_L_I/O	REG_GND	15
18	REG_GND	REG_GND	17	18	REG_GND	REG_GND	17
20	REG_GND	REG_GND	19	20	REG_GND	REG_GND	19
22	TPA+	TPA-	21	22	TPA+	TPA-	21
24	TPB+	TPB-	23	24	TPB+	TPB-	23
26	REG_GND	REG_GND	25	26	REG_GND	REG_GND	25
28	USB_D+	USB_D-	27	28	USB_D+	USB_D-	27
30	REG_GND	REG_GND	29	30	REG_GND	REG_GND	29
32	USB_DET	XCRADLE_IN	31	32	USB_DET	XCRADLE_IN	31
34	BATT_UNREG	BATT_SIG	33	34	BATT_UNREG	BATT_SIG	33
36	BATT_UNREG	BATT_GND	35	36	BATT_UNREG	BATT_GND	35
38	BATT_UNREG	BATT_GND	37	38	BATT_UNREG	BATT_GND	37
40	BATT_UNREG	BATT_GND	39	40	BATT_UNREG	BATT_GND	39
42	BATT_UNREG	BATT_GND	41	42	BATT_UNREG	BATT_GND	41
44	BATT/XEXT_SET	BATT_GND	43	44	BATT/XEXT_SET	BATT_GND	43
46	BATT/XEXT_CR	BATT_GND	45	46	BATT/XEXT_CR	BATT_GND	45
48	LANC_SIG_ST	ACV_GND	47	48	LANC_SIG_ST	ACV_GND	47
50	ACV_UNREG	ACV_GND	49	50	ACV_UNREG	ACV_GND	49
52	ACV_UNREG	ACV_GND	51	52	ACV_UNREG	ACV_GND	51
54	ACV_UNREG	ACV_GND	53	54	ACV_UNREG	ACV_GND	53
56	ACV_UNREG	ACV_GND	55	56	ACV_UNREG	ACV_GND	55
58	ACV_UNREG	ACV_GND	57	58	ACV_UNREG	ACV_GND	57
60	ACV_UNREG	ACV_GND	59	60	ACV_UNREG	ACV_GND	59

CN8501			
42	ACV_GND	ACV_GND	41
40	ACV_GND	ACV_GND	39
38	USB_GND	N.C	37
36	USB_GND	NTPB	35
34	USB_D-	TPB	33
32	USB_D+	TPA	31
30	USB_GND	NTPA	29
28	USB_GND	N.C.	27
26	USB_DET/VBUS	LANC_SIG	25
24	USB_DET/VBUS	(XLANC_JACK_IN)	23
22	N.C.	BATT/XEXT_CR	21
20	REG_GND	XCRADLE_IN	19
18	AUDIO_L	N.C	17
16	REG_GND	N.C	15
14	AUDIO_R	S_C	13
12	REG_GND	REG_GND	11
10	VIDEO_I/O	S_Y	9
8	AV_JACK_IN	S_JACK_IN	7
6	N.C	N.C	5
4	ACV_UNREG	ACV_UNREG	3
2	ACV_UNREG	ACV_UNREG	1

CN1006 40P			B TO B			CN8600 40P	
40	REG_GND	REG_GND	39	40	REG_GND	REG_GND	39
38	PANEL_R	REG_GND	37	38	PANEL_R	REG_GND	37
36	PANEL_G	REG_GND	35	36	PANEL_G	REG_GND	35
34	PANEL_B	REG_GND	33	34	PANEL_B	REG_GND	33
32	REG_GND	REG_GND	31	32	REG_GND	REG_GND	31
30	N.C	KEY_AD1	29	30	N.C	KEY_AD1	29
28	EP_4.6V	EP_2.8V	27	28	EP_4.6V	EP_2.8V	27
26	BL_-15.5V	EP_8.5V	25	26	BL_-15.5V	EP_8.5V	25
24	PANEL_HD	BL_2.8V	23	24	PANEL_HD	BL_2.8V	23
22	PANEL_VD	BL_GND	21	22	PANEL_VD	BL_GND	21
20	SE_GND(REG_GND)	TP_Y	19	20	SE_GND(REG_GND)	TP_Y	19
18	TP_SEL1	TP_X	17	18	TP_SEL1	TP_X	17
16	VD_SI	XCS_LCD	15	16	VD_SI	XCS_LCD	15
14	VD_SCK	VD_SO	13	14	VD_SCK	VD_SO	13
12	REG_GND	GND	11	12	REG_GND	GND	11
10	XBATT_INFO_SW	KEY_AD2	9	10	XBATT_INFO_SW	KEY_AD2	9
8	KEY_AD3	KEY_AD4	7	8	KEY_AD3	KEY_AD4	7
6	REG_GND	REG_GND	5	6	REG_GND	REG_GND	5
4	SP-	SP+	3	4	SP-	SP+	3
2	REG_GND	REG_GND	1	2	REG_GND	REG_GND	1

4-2. SCHEMATIC DIAGRAMS

Link

- CR-048 BOARD (CRADLE CONNECTOR)
- FLASH UNIT (FL7450)
- SE-151 BOARD (PITCH/YAW SENSOR AMP)
- PD-225 BOARD (RGB DRIVE, TG)
- FP-995 FLEXIBLE BOARD (JACK)
- CONTROL SWITCH BLOCK (SB7450)
- VP-060 BOARD (RELAY, KEY)
- FP-996 FLEXIBLE BOARD (SIRCS, NIGHTSHOT)
- FP-993 FLEXIBLE BOARD (RELAY)
- CONTROL SWITCH BLOCK (FK7450)
- FP-994 FLEXIBLE BOARD (RELAY)
- CONTROL SWITCH BLOCK (PS7450)
- MS-234 BOARD (MIC AMP)
- FP-228/FP-467/FP-826 FLEXIBLE BOARD
- ST-108 BOARD (FLASH DRIVE)

- COMMON NOTE FOR SCHEMATIC DIAGRAMS

(ENGLISH)

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μμF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with * differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO/SERVO SIGNAL
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

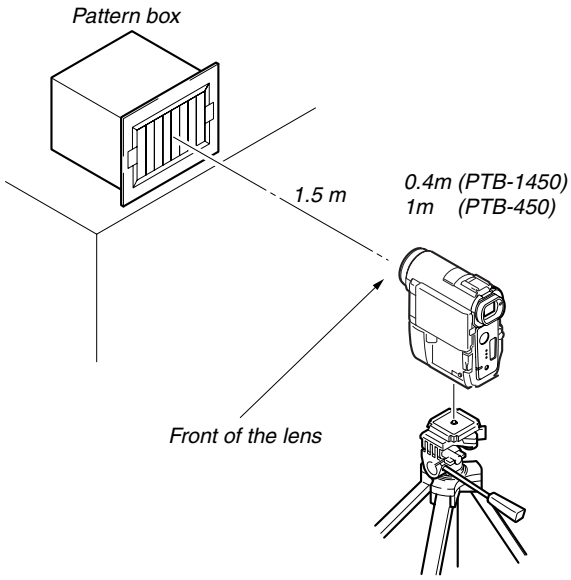
(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

Precautions Upon Replacing CCD imager

- The CD-537 board mounted as a repair part is not equipped with a CCD imager. When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

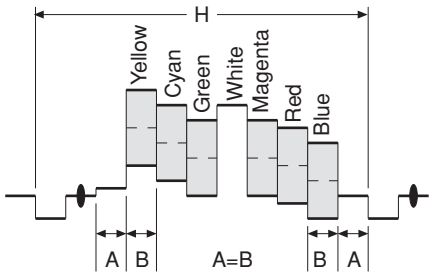


Fig. a (Video output terminal output waveform)

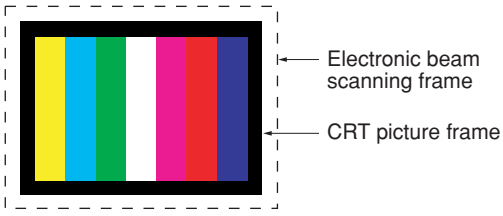


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(JAPANESE)

回路図共通ノート
（他に必要なノートは各ブロックに記載してあります）

【回路図ノート】

・ケミコン，タンタルを除くコンデンサで，耐圧50V以下のものはその耐圧を省略。単位はすべてμF（pはpF）。
・チップ抵抗で指示のないものは，1／10W以下。
kΩ＝1000Ω，MΩ＝1000kΩ
・チップ部品交換時の注意
取り外した部品は再使用せず，未使用の部品をご使用ください。
タンタルコンデンサのマイナス側は熱に弱いため注意してください。
・チップ部品には下記のように表示したものがあります。

例	C 541	L 452
	22U	10UH
	TA　A	2520
	↑　↑	↑
	種類　温度特性	外形寸法（mm）

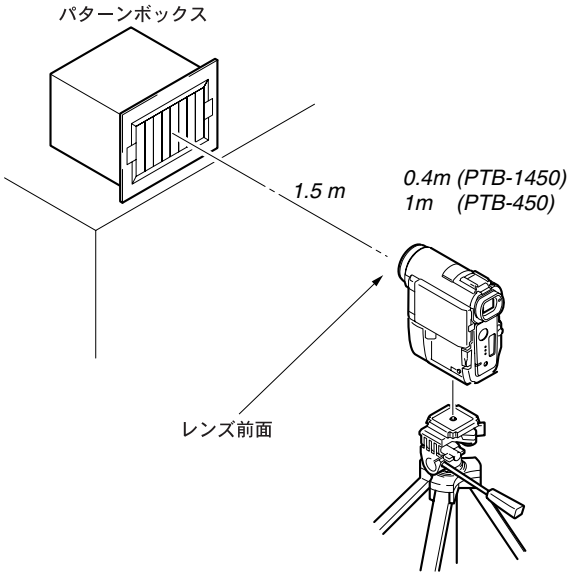
・抵抗，コンデンサ，ICなど定数にXXがあるものは，使用していない事を示しています。このため，使用していない回路が記載されている事があります。
・※印のある部品は，機種などにより異なりますので機能別マウントー覧表を参照してください。
・可変抵抗と半固定抵抗で，B特性の表示を省略。
・信号名表記について，下記のような場合があります。
XEDIT → $\overline{\text{EDIT}}$　　PB/XREC → PB/$\overline{\text{REC}}$
・は不燃性抵抗。
・はヒューズ抵抗。
・はパネル表示名称。
・はB＋ライン。
・はB－ライン。
・はBライン（＋，－）の入出力方向を示す。
・は調整名称。
・はビデオ信号（アナログ）。
・はオーディオ信号（アナログ）。
・はビデオ/オーディオ信号（アナログ）。
・はビデオ/オーディオ/サーボ信号。
・はサーボ信号。
・○番号は，波形図の照合番号。

CCDイメージャ交換時の注意
・補修部品として供給されるCD-537 基板には、CCDイメージャがマウントされていません。
CD-537基板を交換する時は、旧基板よりCCDイメージャを外し、新基板へ再度取り付けてください。
・CCDイメージャを交換した場合は、カメラ部の全調整を行ってください。
・CCDイメージャは構造上、静電気により破壊される恐れがあるため、MOS ICと同様に注意して取り扱ってください。
また、受光部にはゴミの付着、および強い光がはいることのないように注意してください。

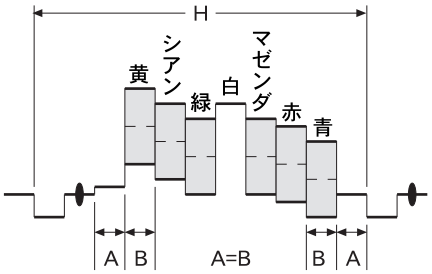
【電圧・波形測定条件ノート】

・電圧値及び信号波形はパターンボックスのカラーバーチャートを被写体としたときの測定点対アース間の参考値。
（デジタルマルチメータ；入力インピーダンス　DC10MΩ使用）
・使用テスタの入力インピーダンスにより電圧値が多少異なります。

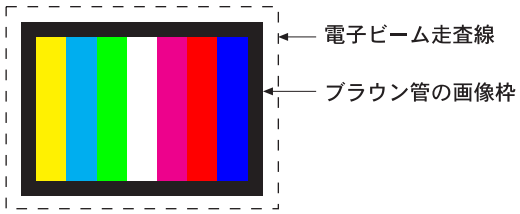
1. 接続図



2. 図a及び図bの波形が得られるように画枠調整して下さい。



図a（映像入出力端子出力波形）



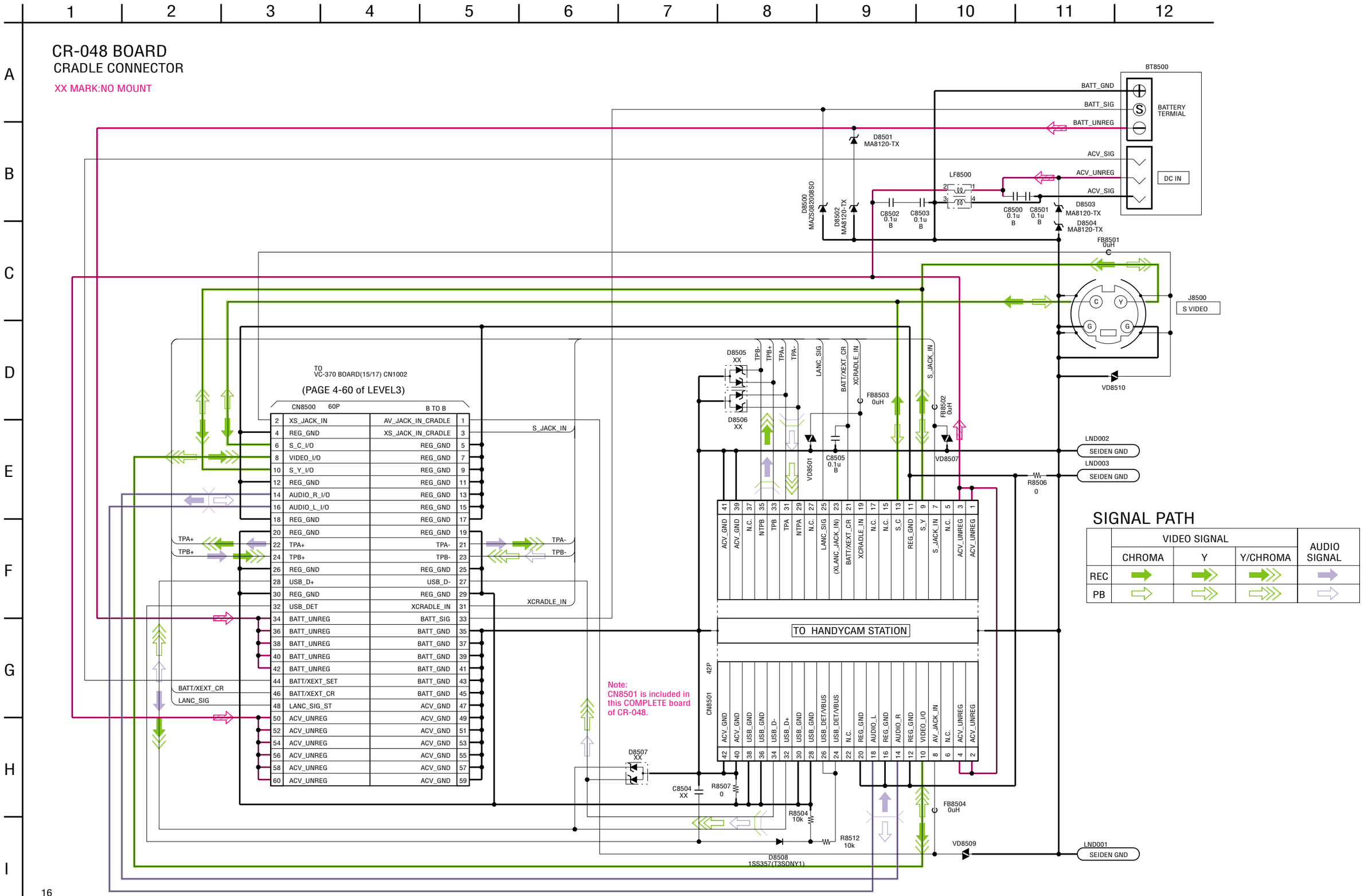
図b（テレビモニタの映像）

⚠印の部品，または⚠印付きの点線で囲まれた部品は，安全性を維持するために重要な部品です。
従って交換時は，必ず指定の部品を使用して下さい。

お願い
図面番号で部品を指定するときは基板名又はブロックを併せて指定して下さい。

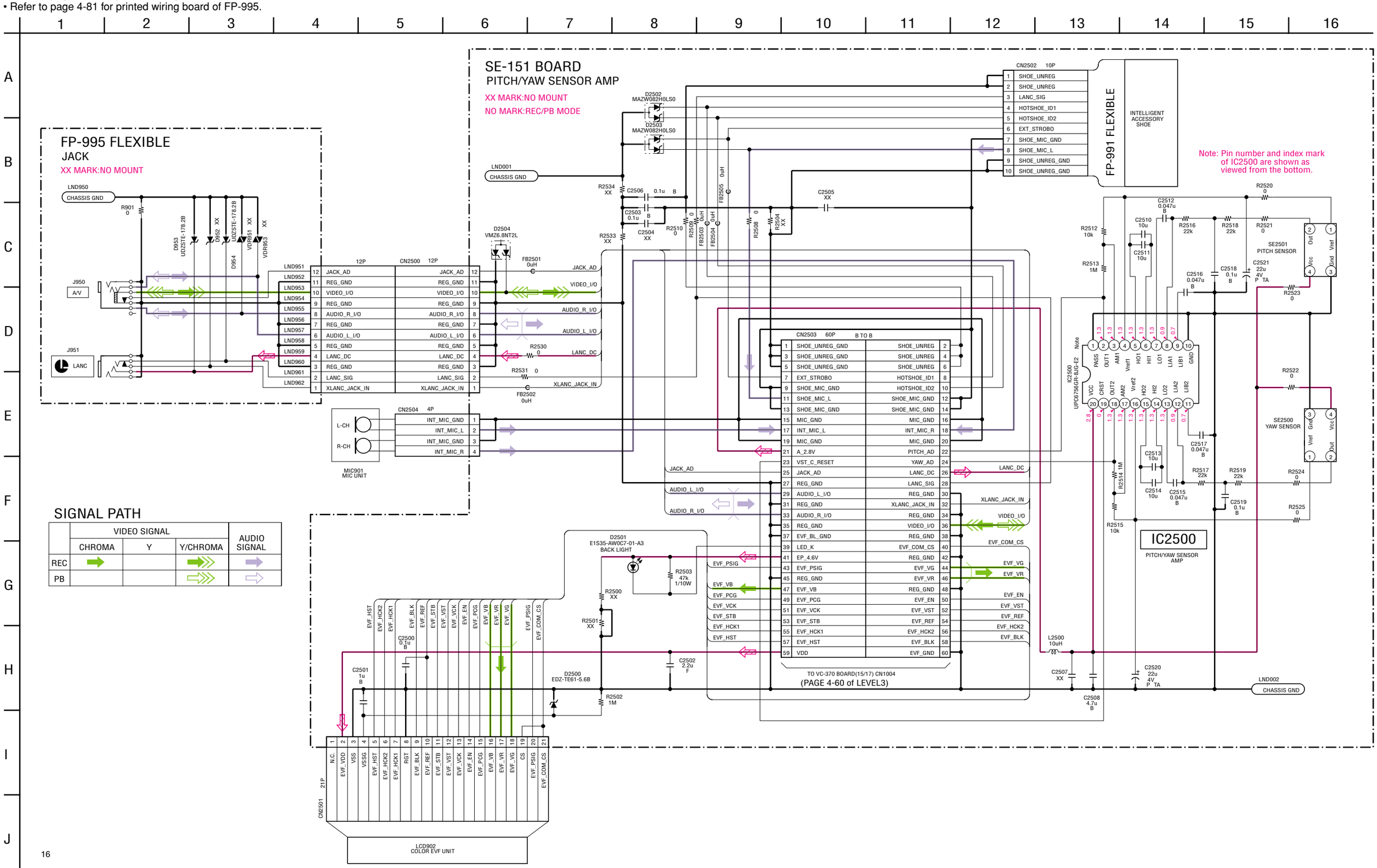
4-2. SCHEMATIC DIAGRAMS

For Schematic Diagram
• Refer to page 4-67 for printed wiring board.

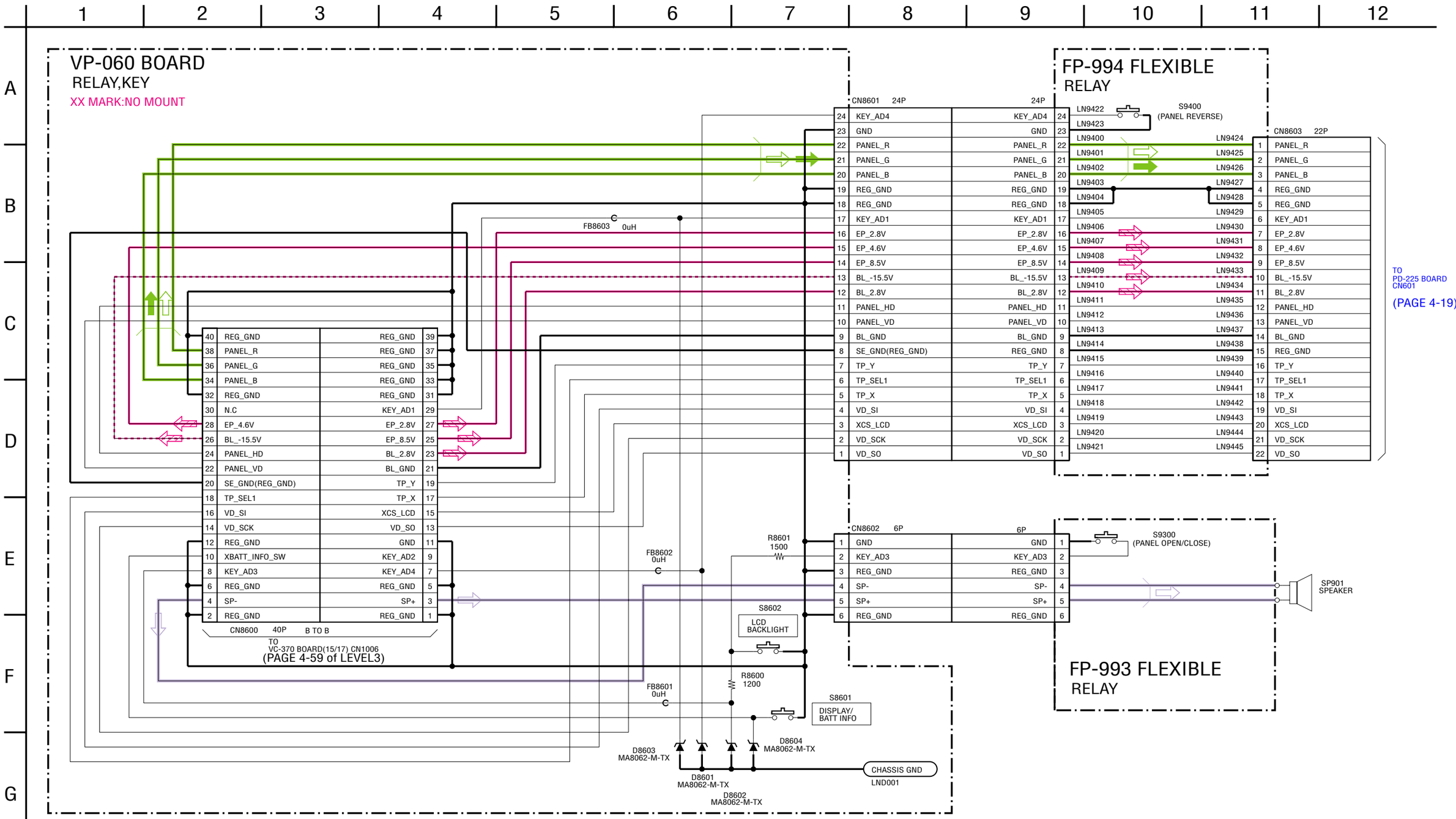


For Schematic Diagram

• Refer to page 4-69 for printed wiring board of SE-151.
• Refer to page 4-81 for printed wiring board of FP-995.



For Schematic Diagram
- Refer to page 4-71 for printed wiring board of VP-060.
- Refer to page 4-82 for printed wiring board of FP-993.
- Refer to page 4-81 for printed wiring board of FP-994.

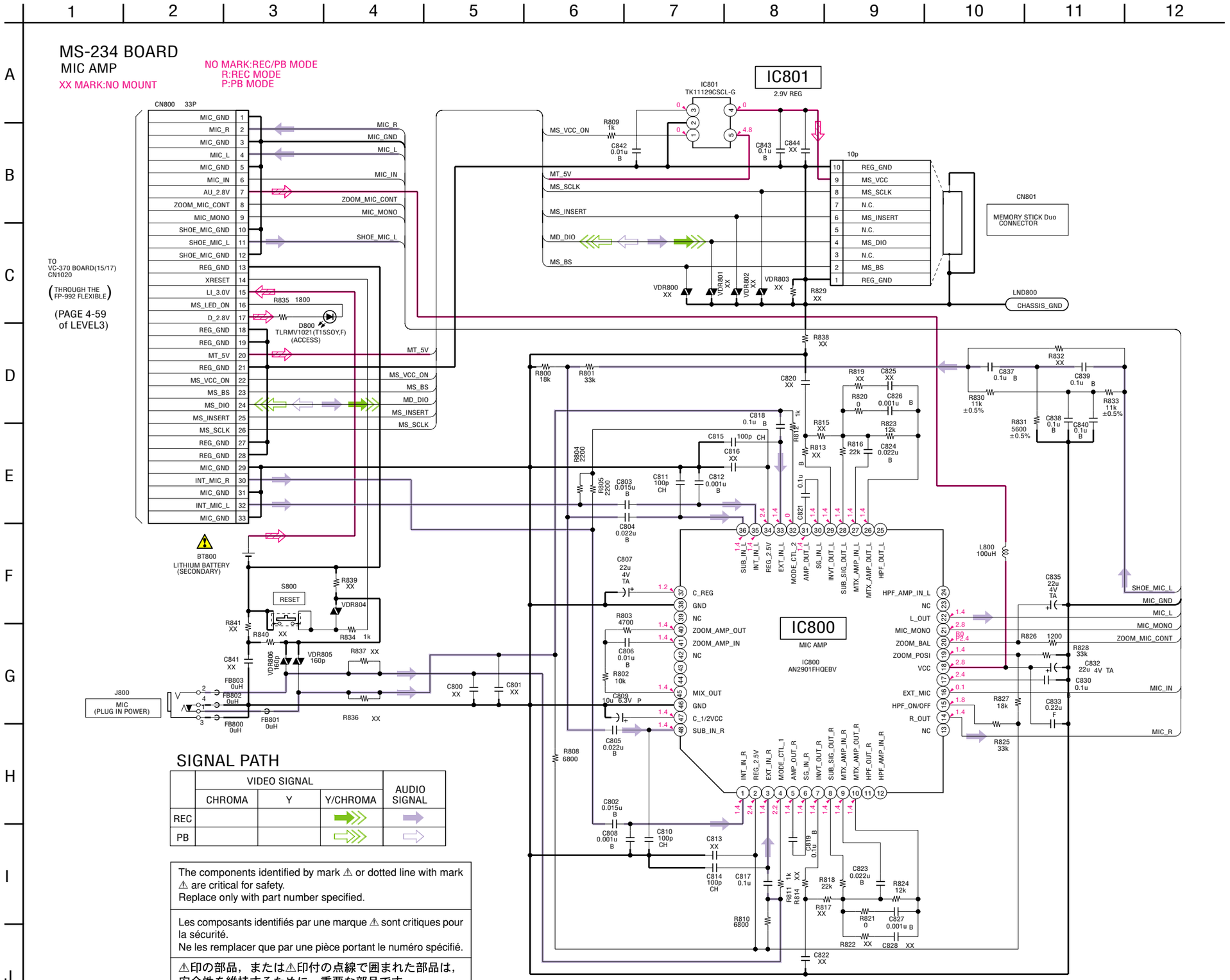


SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡			
PB	⇨			⇨

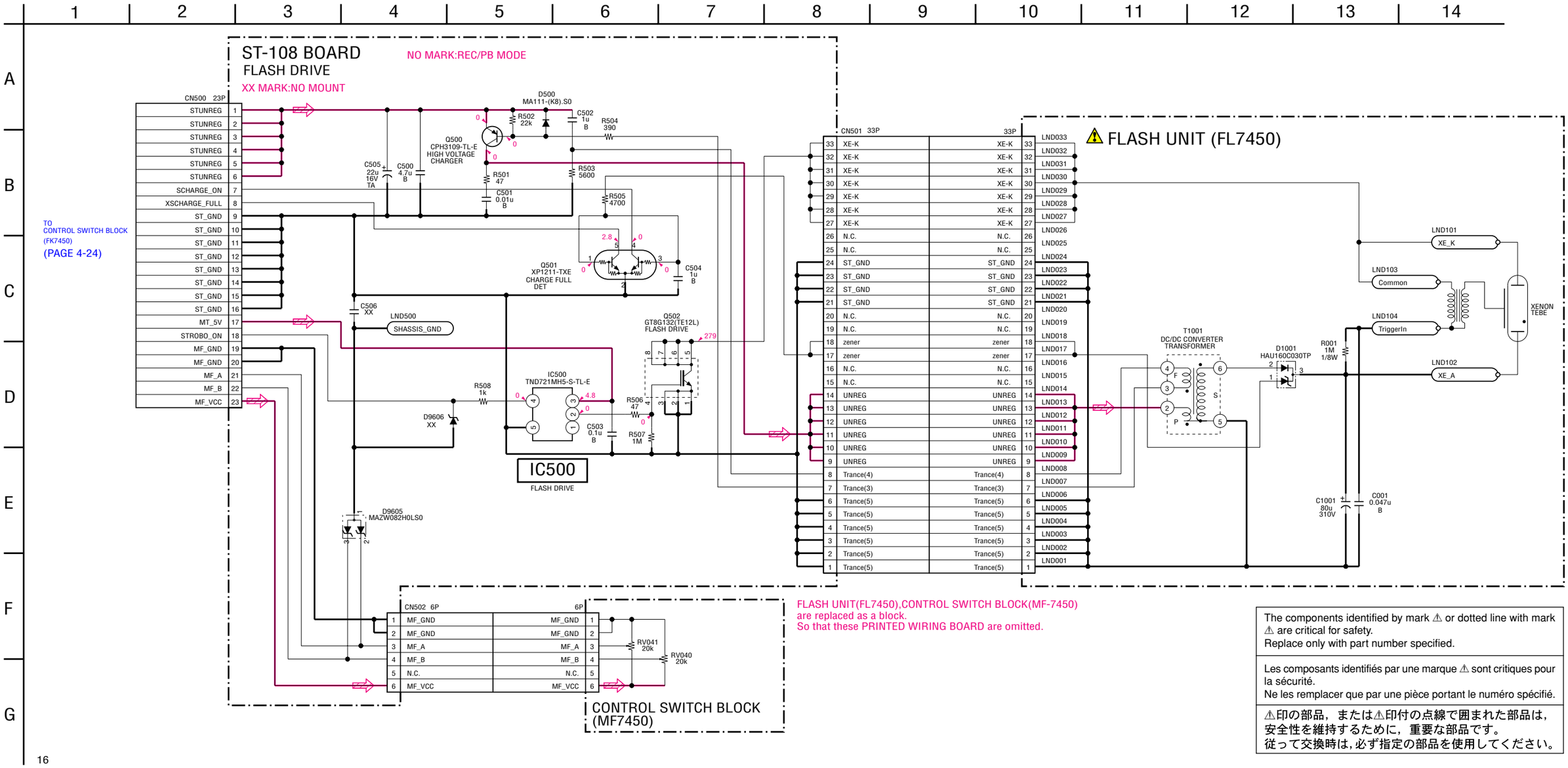
For Schematic Diagram

• Refer to page 4-73 for printed wiring board.



For Schematic Diagram

• Refer to page 4-77 for printed wiring board.



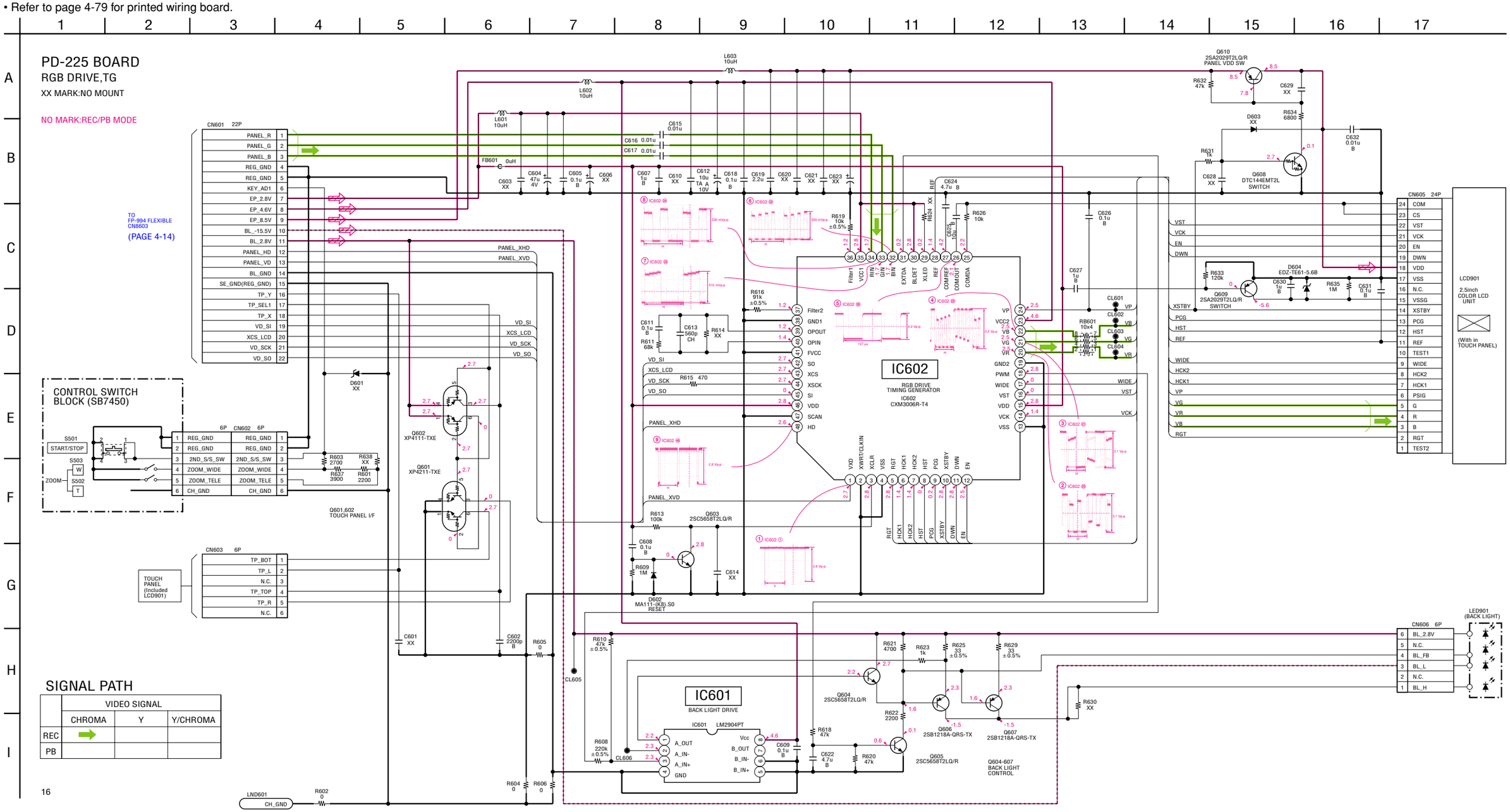
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

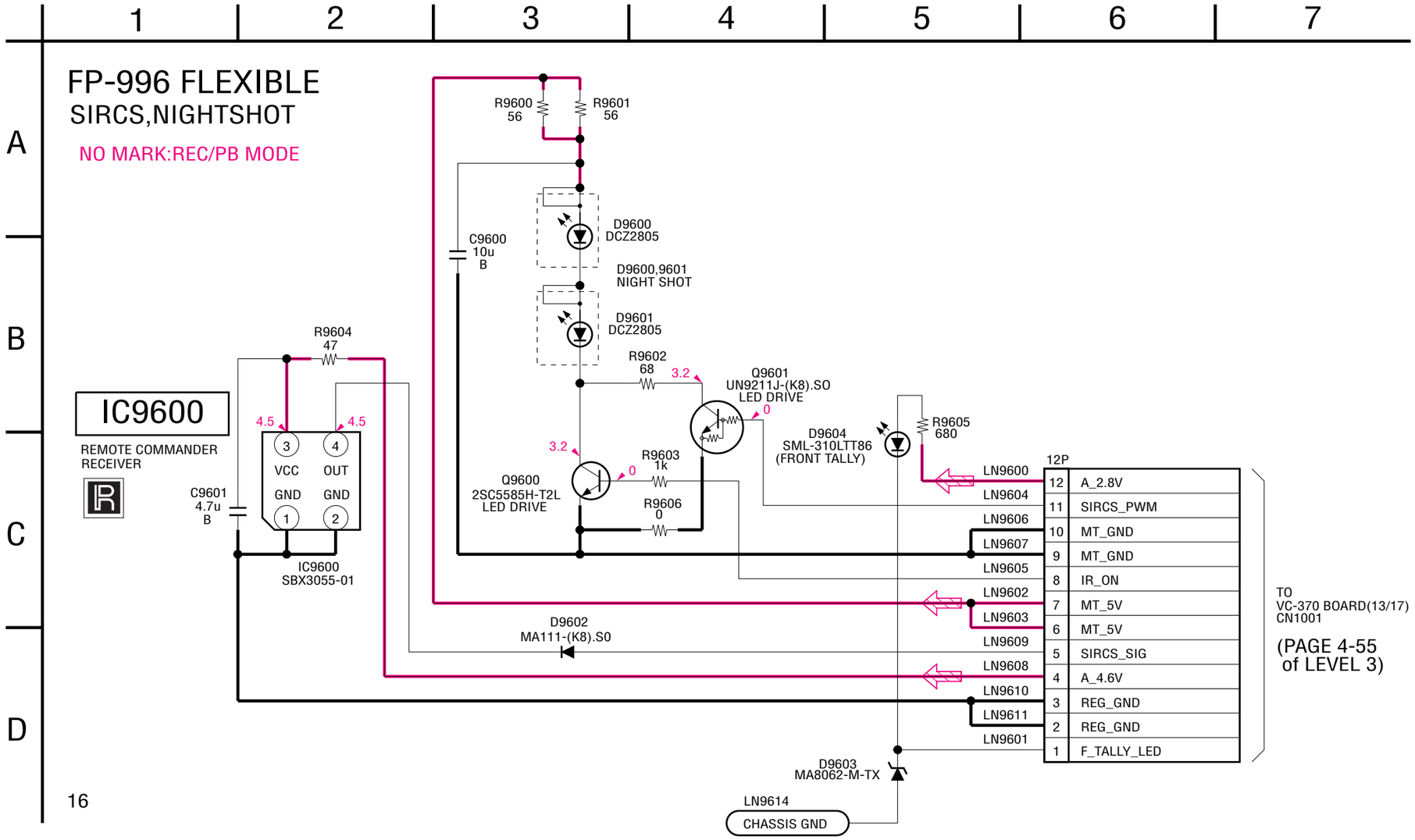
⚠印の部品，または⚠印付の点線で囲まれた部品は，安全性を維持するために，重要な部品です。
従って交換時は，必ず指定の部品を使用してください。

For Schematic Diagram

• Refer to page 4-79 for printed wiring board.



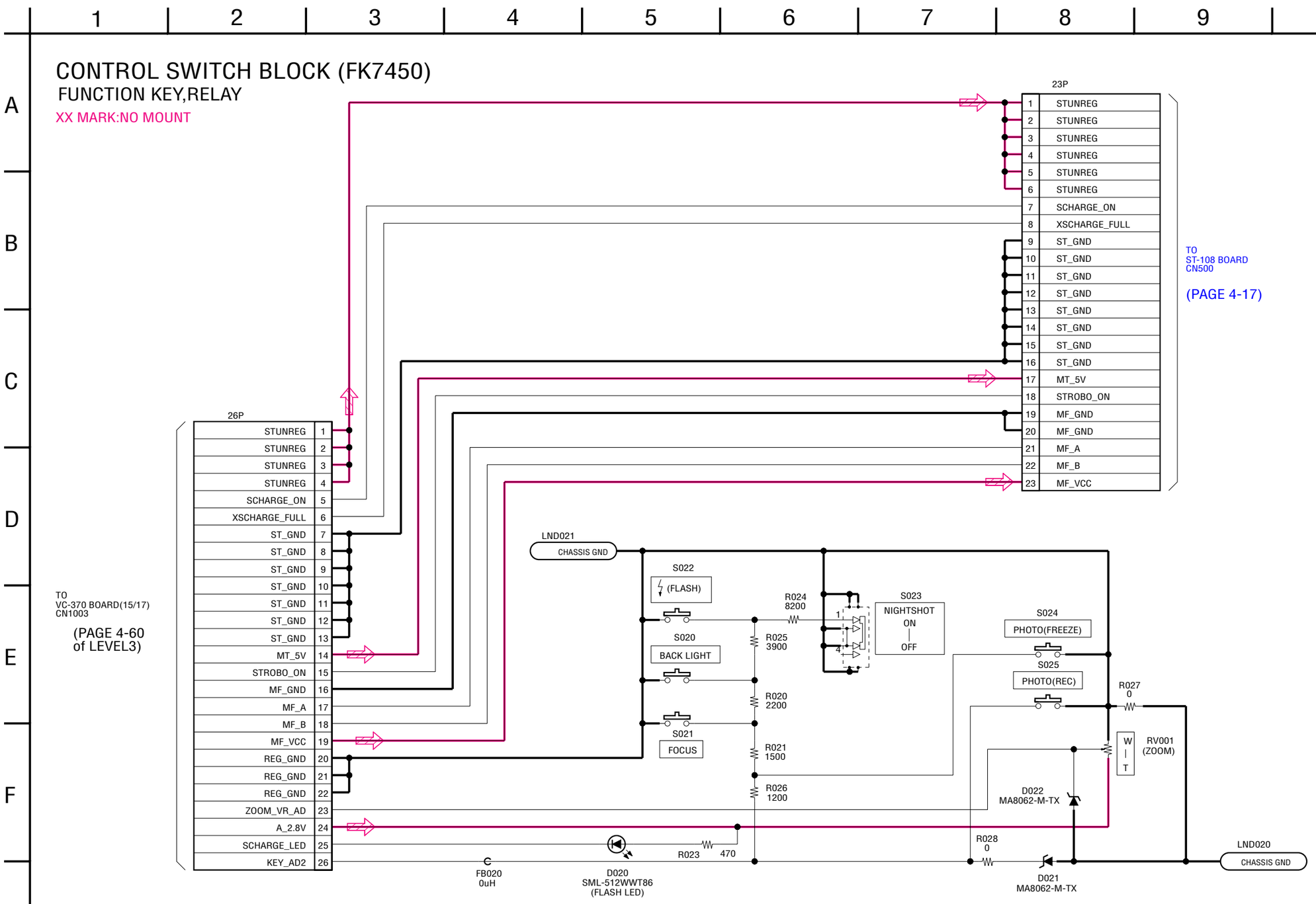
For Schematic Diagram
• Refer to page 4-83 for printed wiring board.



CONTROL SWITCH BLOCK (FK7450)

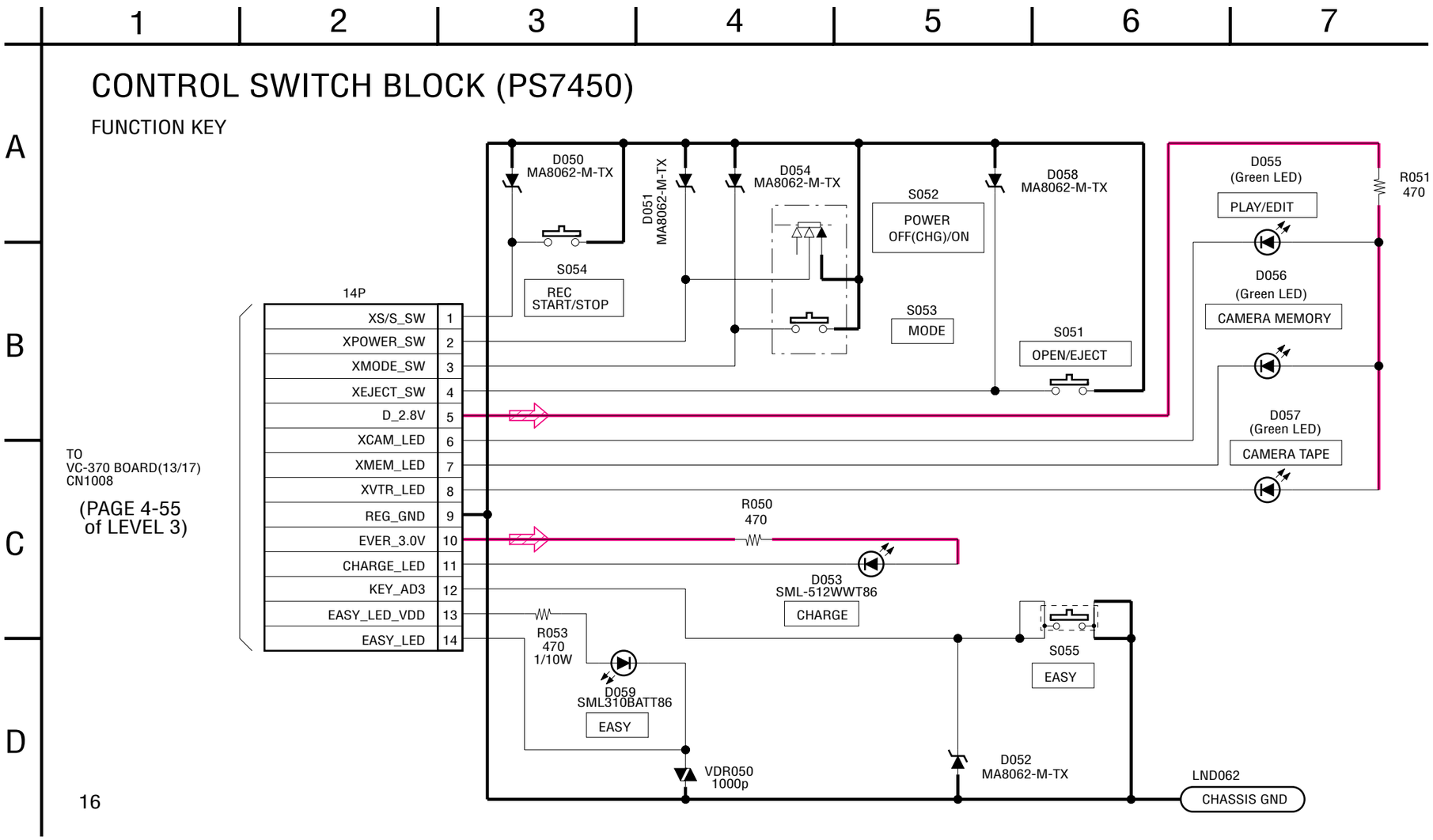
FUNCTION KEY,RELAY

XX MARK:NO MOUNT



CONTROL SWITCH BLOCK(FK7450) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

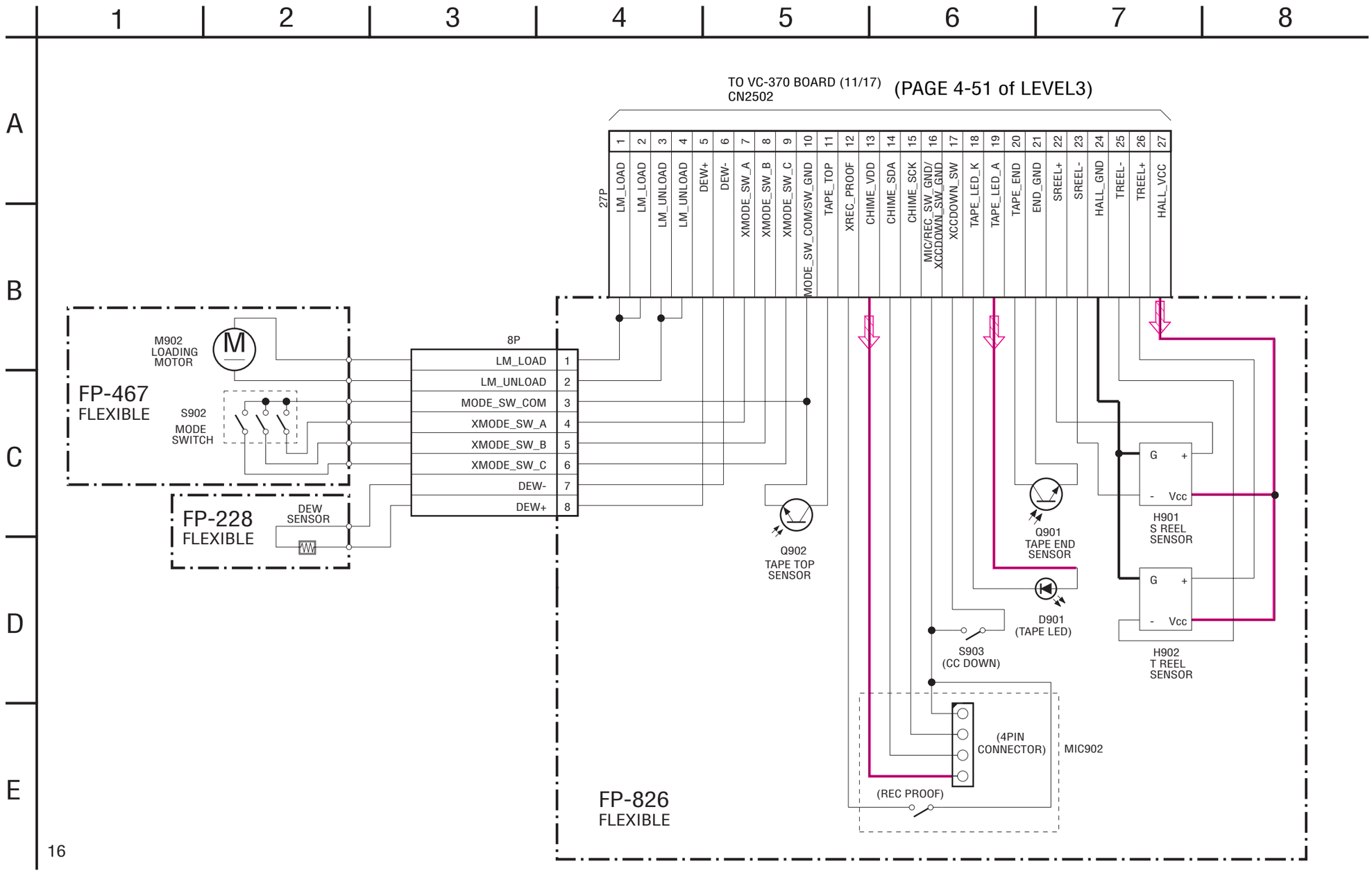
16



CONTROL SWITCH BLOCK(PS7450)is replaced as a block.
So that these PRINTED WIRING BOARD is omitted.

For Schematic Diagram

• Refer to page 4-83 for printed wiring board.



Schematic diagram of the CD-537 and VC-370 board are not shown.
Pages from 4-29 to 4-64 are not shown.

4-3. PRINTED WIRING BOARDS

Link

- CR-048 BOARD
- MS-234 BOARD (SIDE A)
- SE-151 BOARD
- MS-234 BOARD (SIDE B)
- FP-995 FLEXIBLE BOARD
- ST-108 BOARD
- VP-060 BOARD
- PD-225 BOARD
- FP-993 FLEXIBLE BOARD
- FP-996 FLEXIBLE BOARD
- FP-994 FLEXIBLE BOARD
- FP-228/FP-467/FP-826 FLEXIBLE BOARD

- COMMON NOTE FOR PRINTED WIRING BOARDS
- MOUNTED PARTS LOCATION
- CIRCUIT BOARDS LOCATION
- FLEXIBLE BOARDS LOCATION

NAME	*FUNCTION*
CR-048	*CRADLE CONNECTOR*
SE-151	*PITCH/YAW SENSOR AMP*
FP-995	*JACK*
VP-060	*RELAY, KEY*
FP-993	*RELAY*
FP-994	*RELAY*
MS-234	*MIC AMP*
ST-108	*FLASH DRIVE*
PD-225	*RGB DRIVE, TG*
FP-996	*SIRCS, NIGHTSHOT*
CD-537	*CCD IMAGER, TG*
VC-370	*CAMERA A/D CONV., LENS DRIVE, CAMERA PROCESS, MPEG MOVIE/DIGITAL STILL PROCESS, HI/DIGITAL STILL CONTROL, 32Mbit FLASH MEMORY, 64Mbit SDRAM, DV/RF SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, VIDEO I/O, A/D CONV., DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, AUDIO I/O, CONNECTOR, EVF VIDEO, DC/DC CONVERTER*

4-3. PRINTED WIRING BOARDS

(ENGLISH)

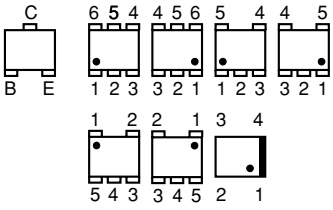
THIS NOTE IS COMMON FOR WIRING BOARDS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

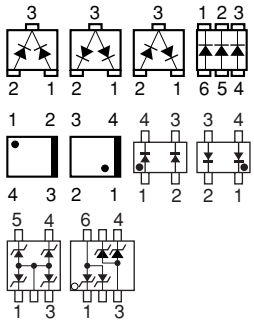
- : Uses unleaded solder.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts

Transistor



Diode



(JAPANESE)

プリント図共通ノート
（他に必要なノートは各ブロックに記載してあります）
【プリント図ノート】

- ：無鉛半田を使用しています。
- は見ている面側のパターン。
  （他のパターンについては表示されていません）
- スルーホールは省略。
- ○番号は波形図の照合番号。
- プリント図には，本機で使用していない部品が記載されている場合があります。
- はパネル表示名称。

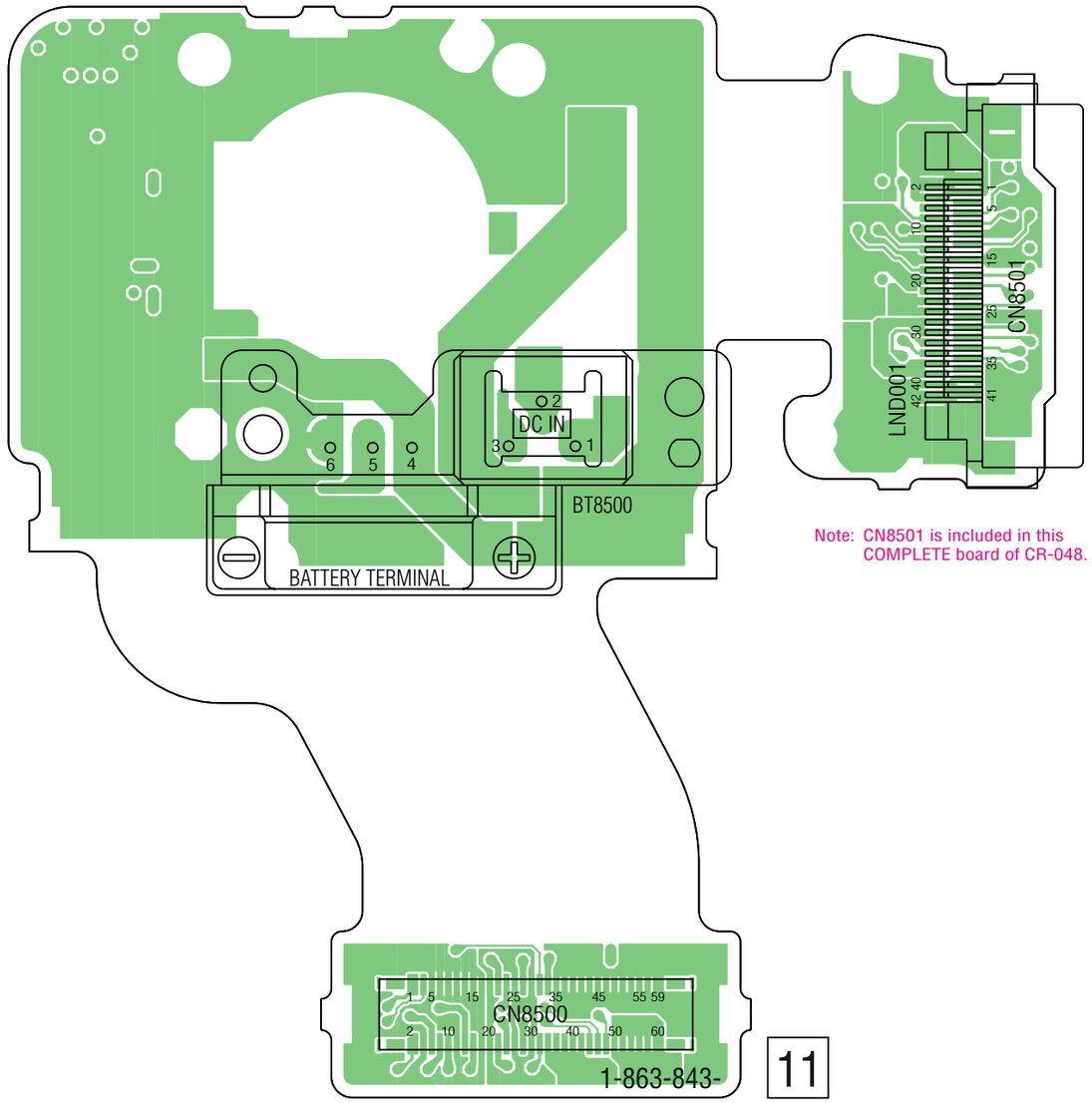
BOARD INFORMATION

board name	parts location	pattern	
	(shown on page)	number of layers	layers not shown
CR-048	–	6	2 to 5
SE-151	–	6	2 to 5
FP-995	–	1	–
VP-060	–	6	2 to 5
FP-993	–	1	–
FP-994	–	1	–
MS-234	4-93	4	2 to 3
ST-108	4-93	4	2 to 3
PD-225	4-93	2	–
FP-996	4-93	1	–
CD-537	4-94	6	2 to 5
VC-370	4-94, 95	8	2 to 7

4-3. PRINTED WIRING BOARDS

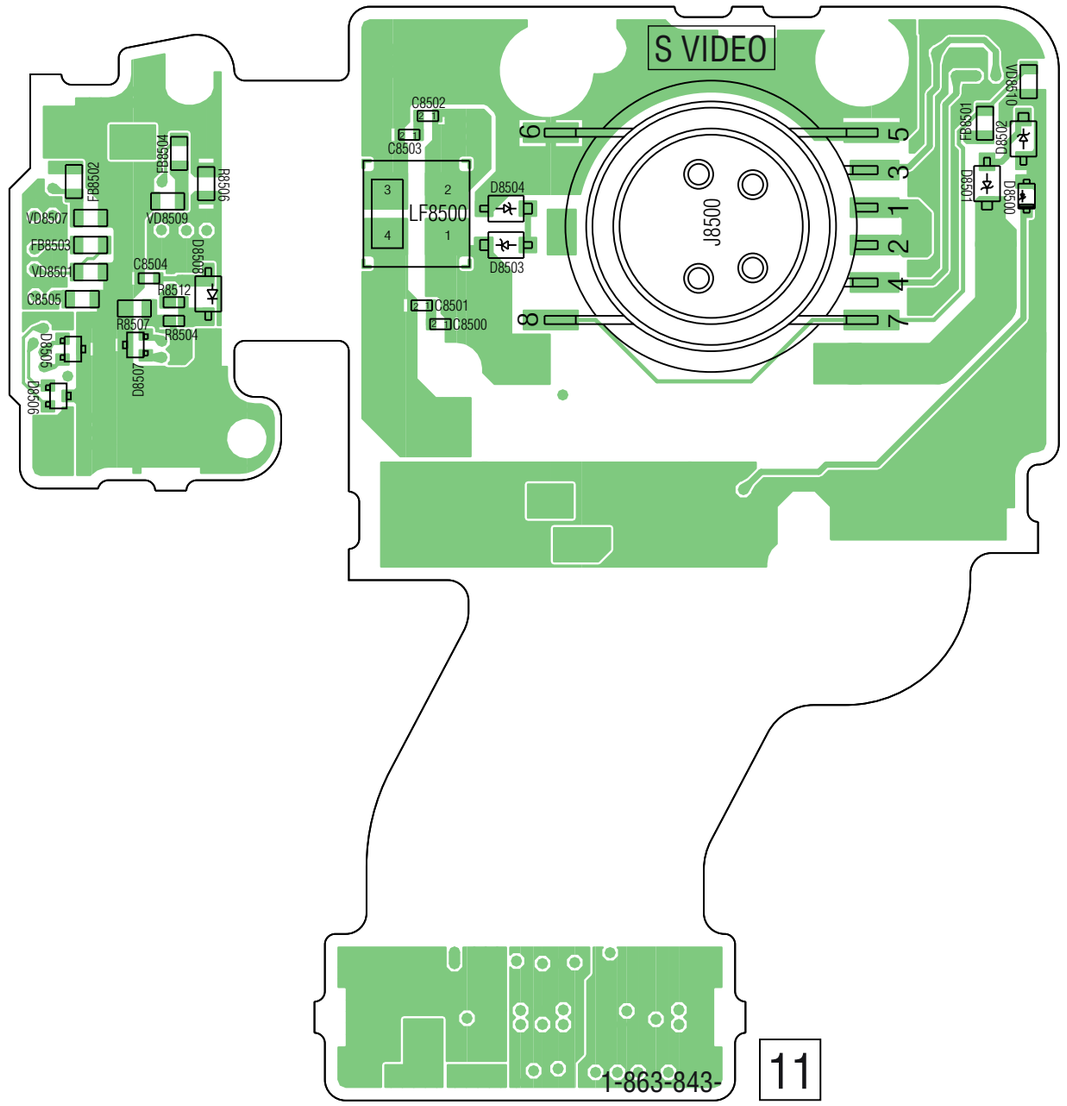
• Refer to page 4-65 for common note for printed wiring board. • : Uses unleaded solder.

CR-048 BOARD (SIDE A)



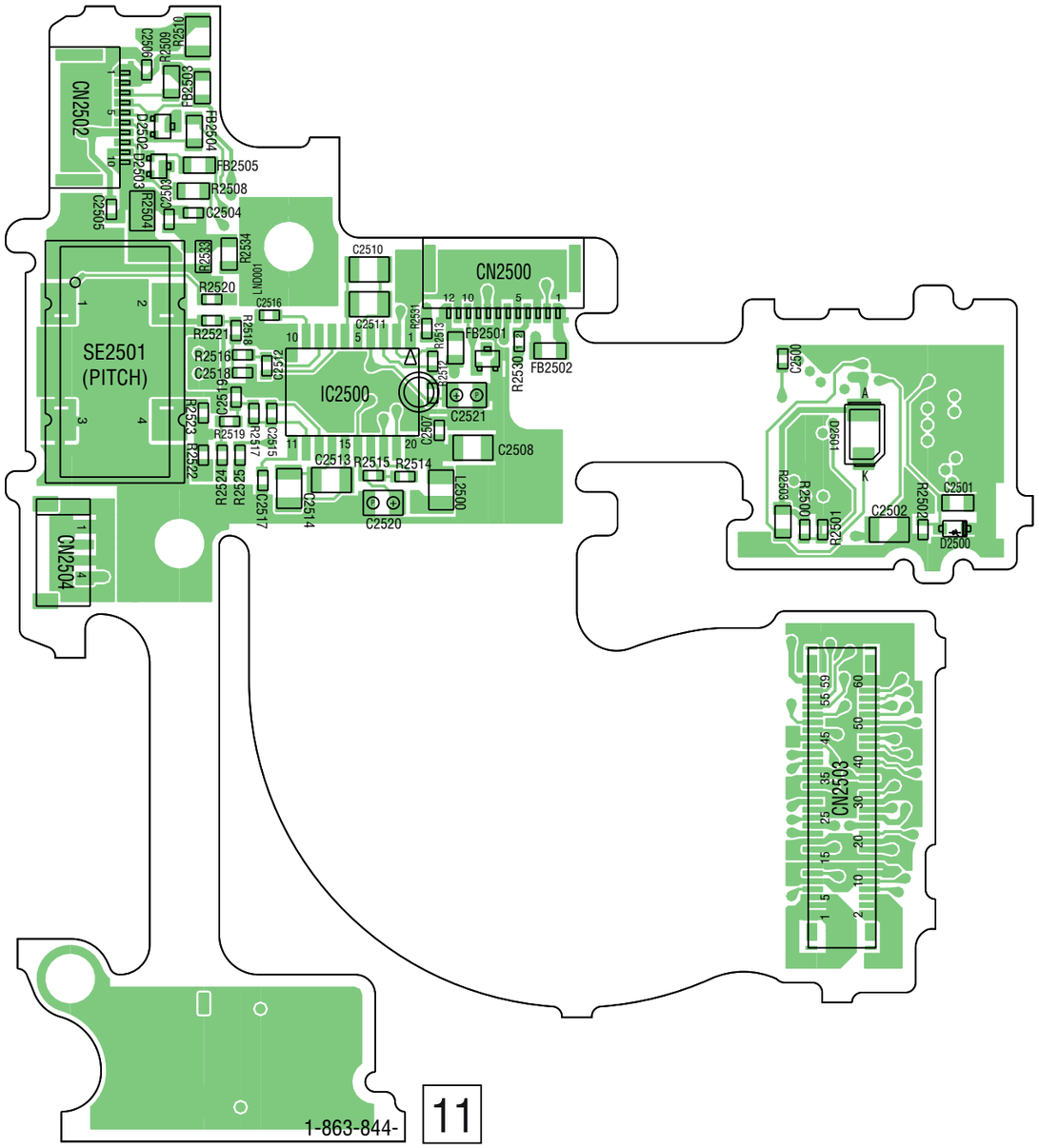
Note: CN8501 is included in this COMPLETE board of CR-048.

CR-048 BOARD (SIDE B)

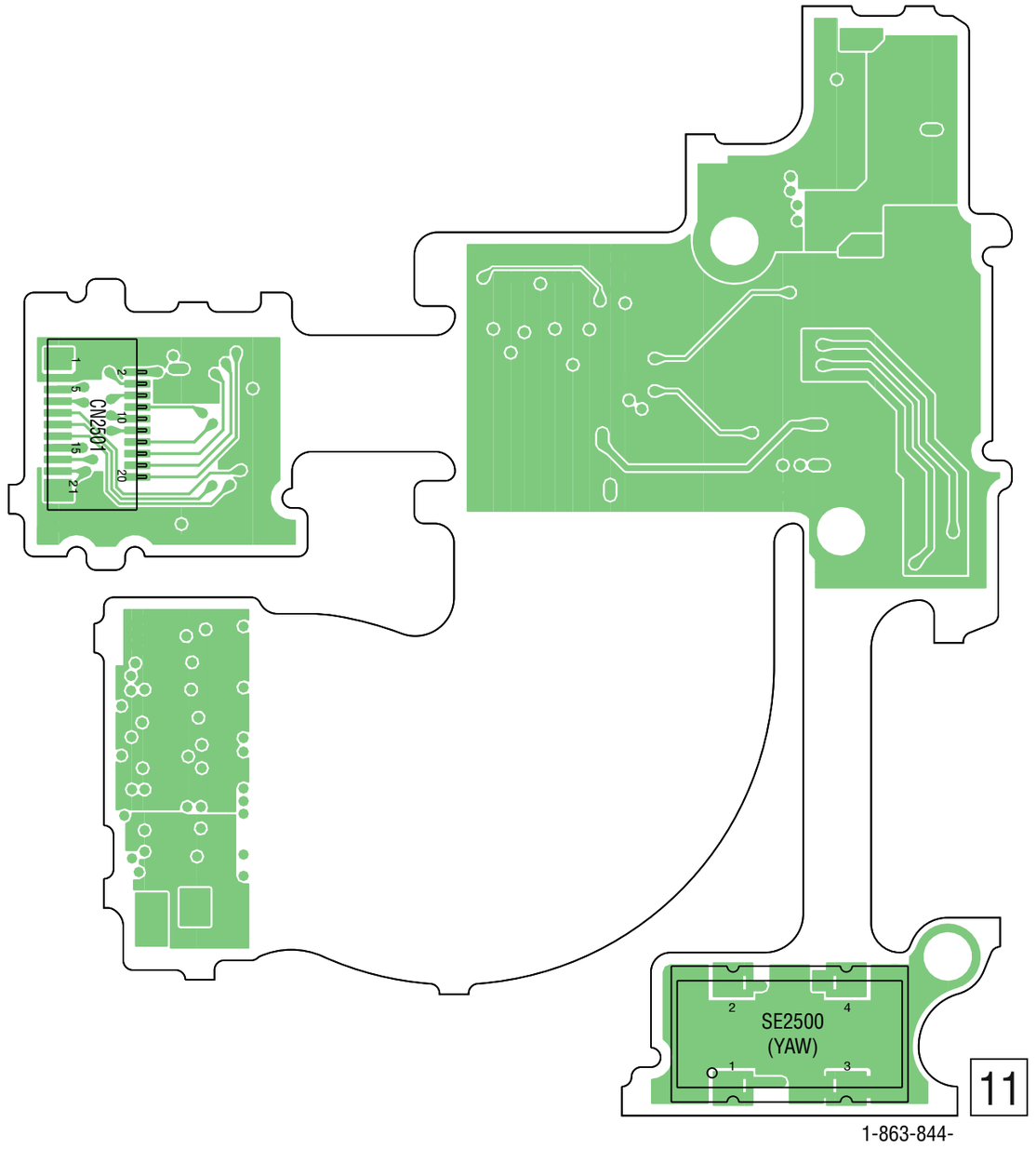


• Refer to page 4-65 for common note for printed wiring board. • : Uses unleaded solder.

SE-151 BOARD (SIDE A)



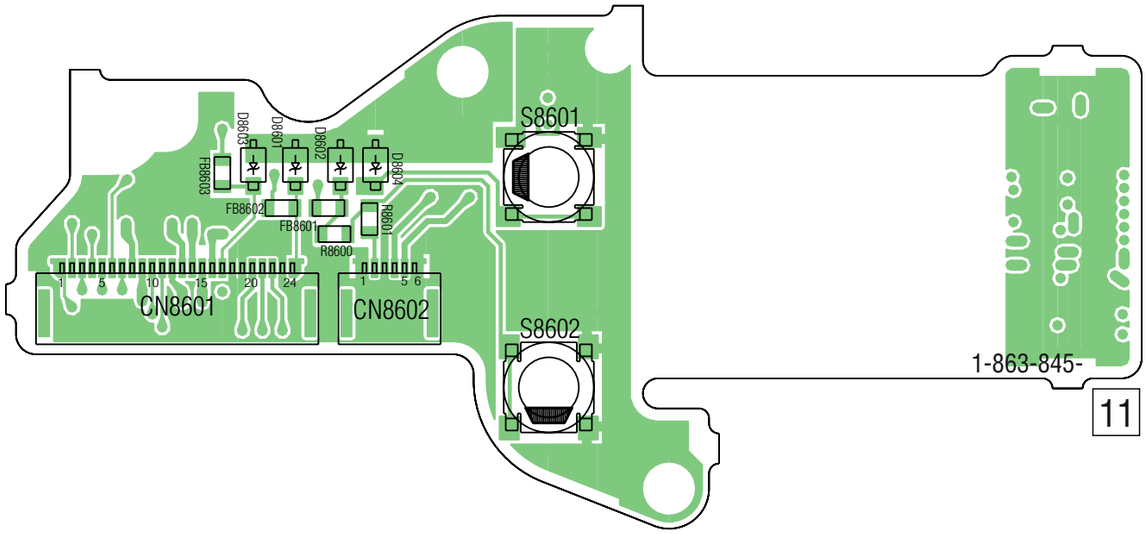
SE-151 BOARD (SIDE B)



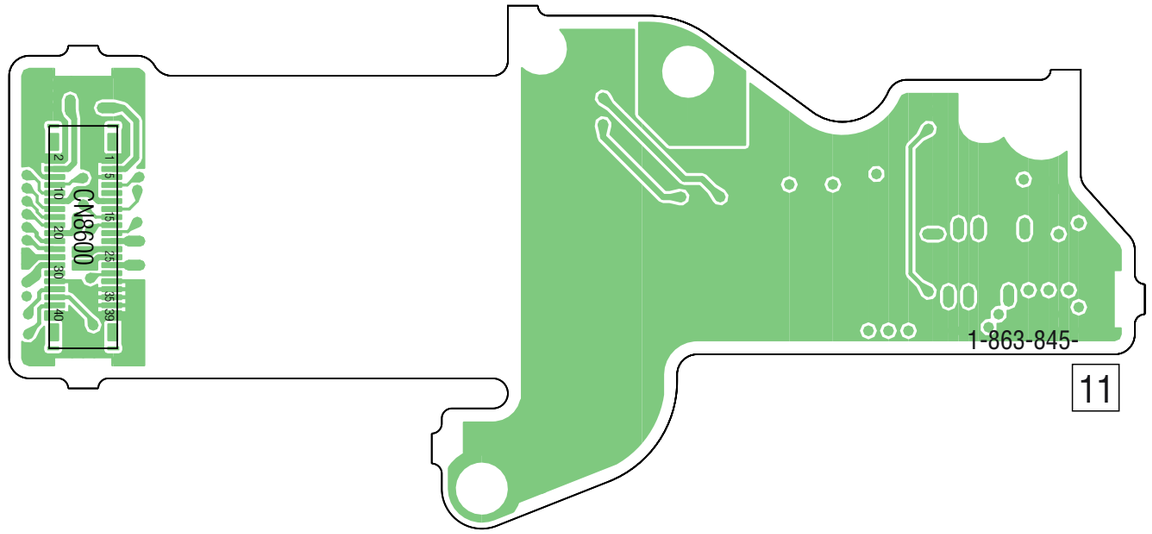
• Refer to page 4-65 for common note for printed wiring board.

• : Uses unleaded solder.

VP-060 BOARD (SIDE A)

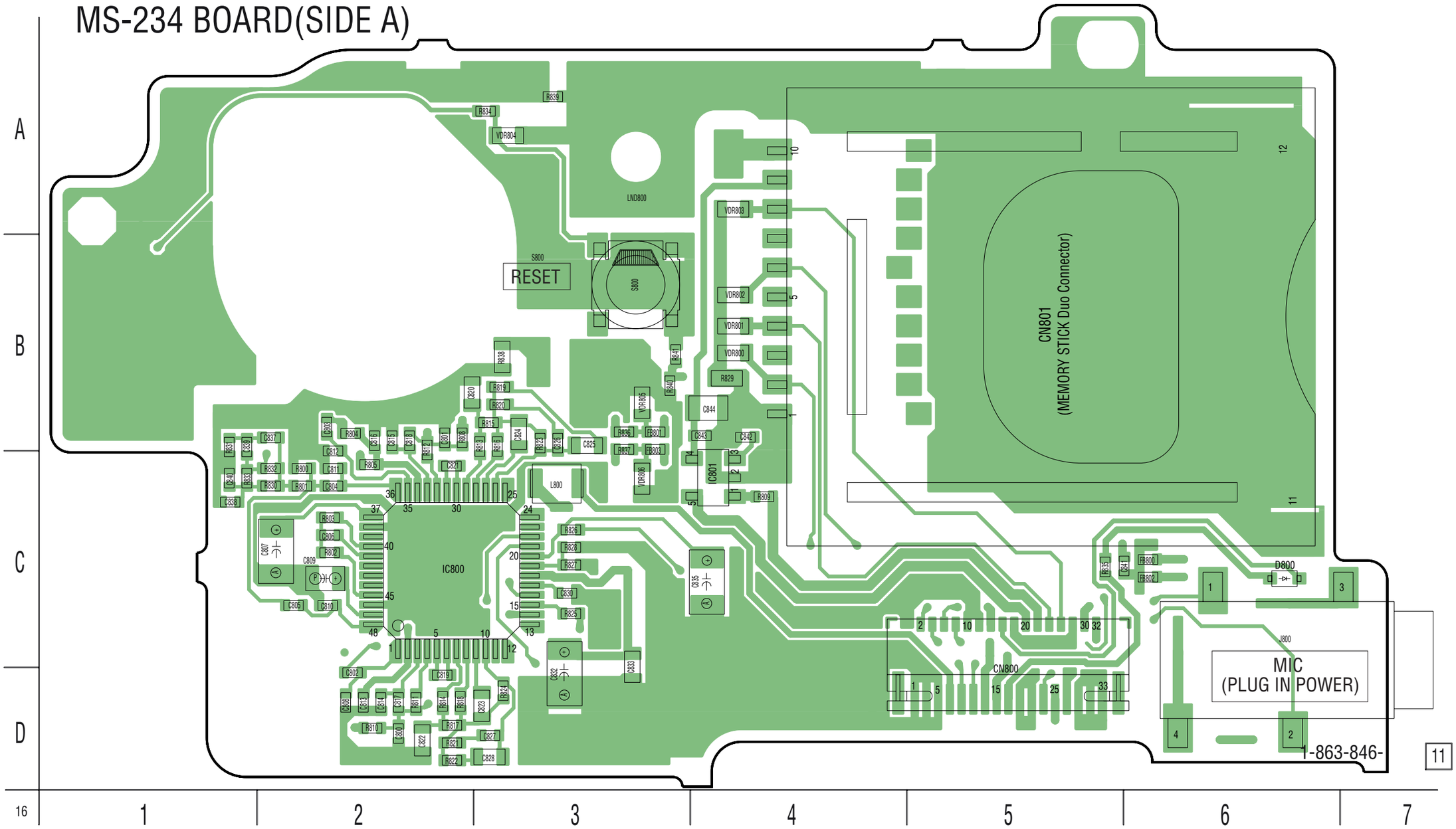


VP-060 BOARD (SIDE B)



• Refer to page 4-65 for common note for printed wiring board. • : Uses unleaded solder.

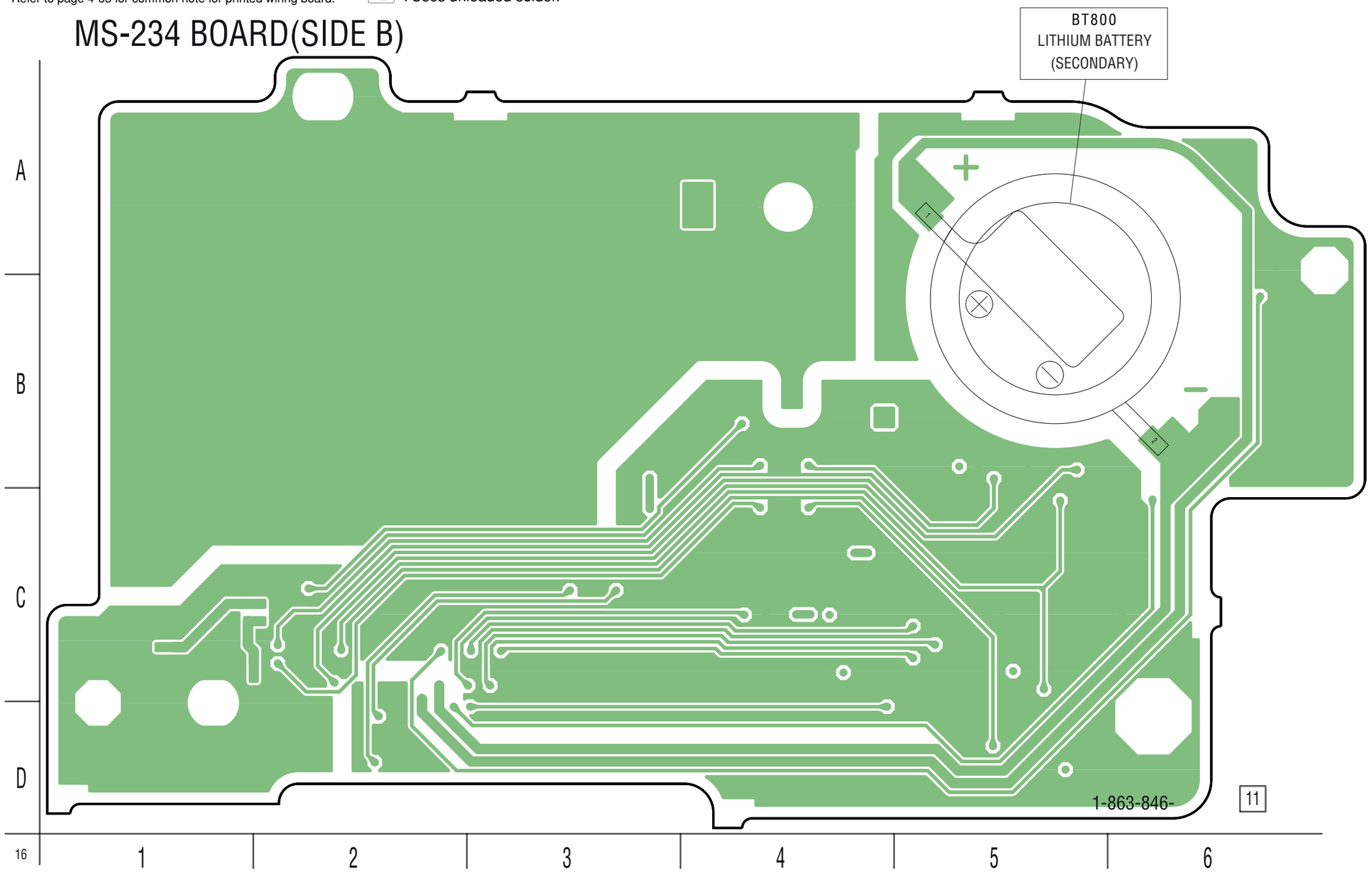
MS-234 BOARD(SIDE A)



1-863-846-11

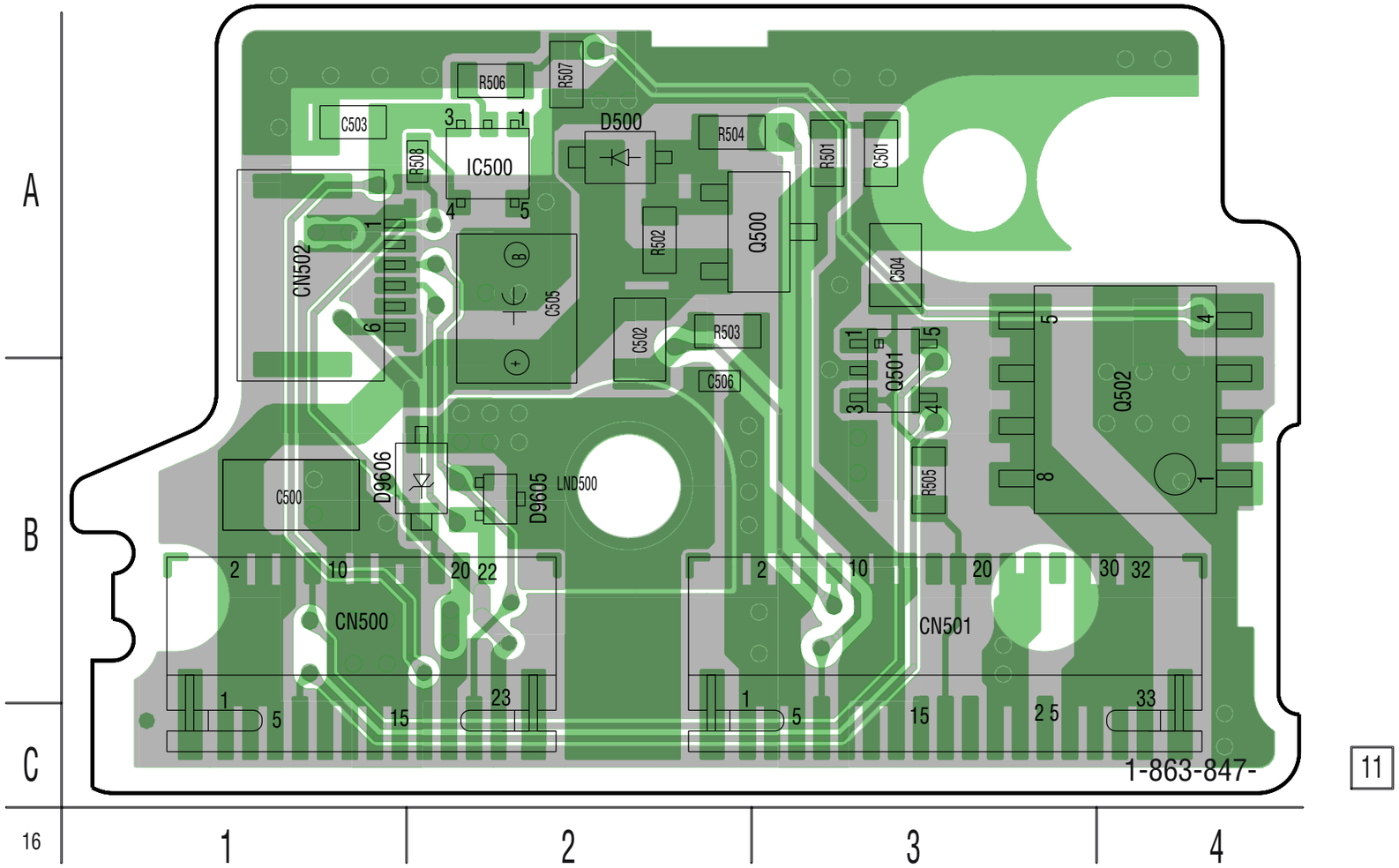
• Refer to page 4-65 for common note for printed wiring board. • : Uses unleaded solder.

MS-234 BOARD(SIDE B)



• Refer to page 4-65 for common note for printed wiring board. • 4F : Uses unleaded solder.

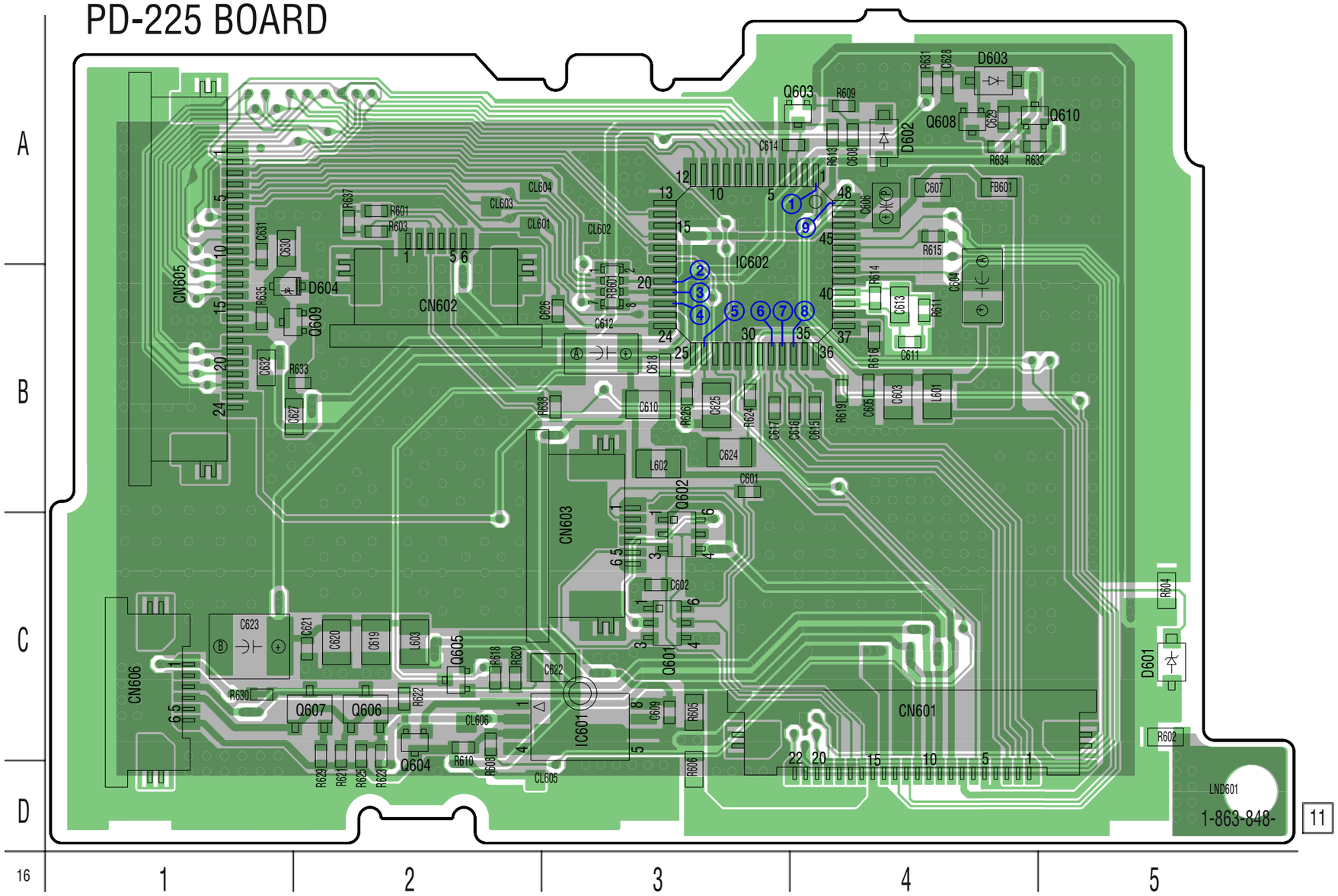
ST-108 BOARD



• Refer to page 4-65 for common note for printed wiring board.

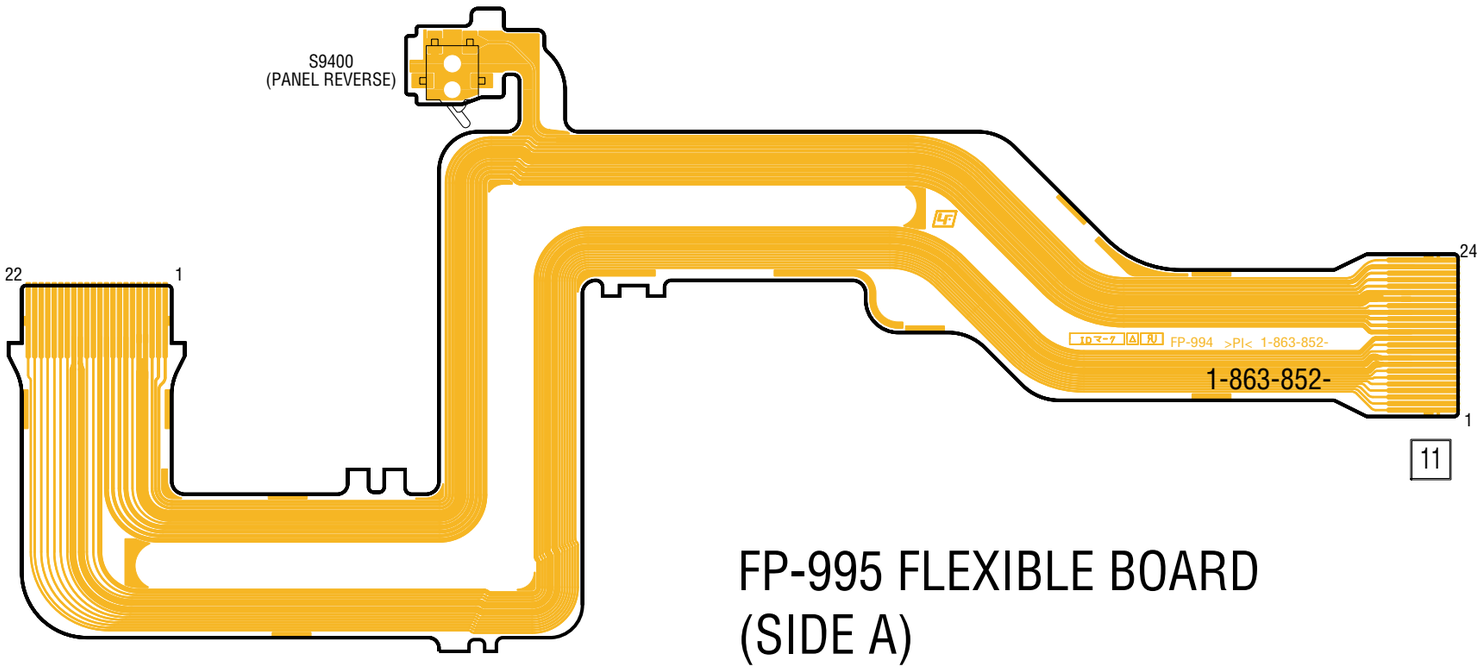
• : Uses unleaded solder.

PD-225 BOARD

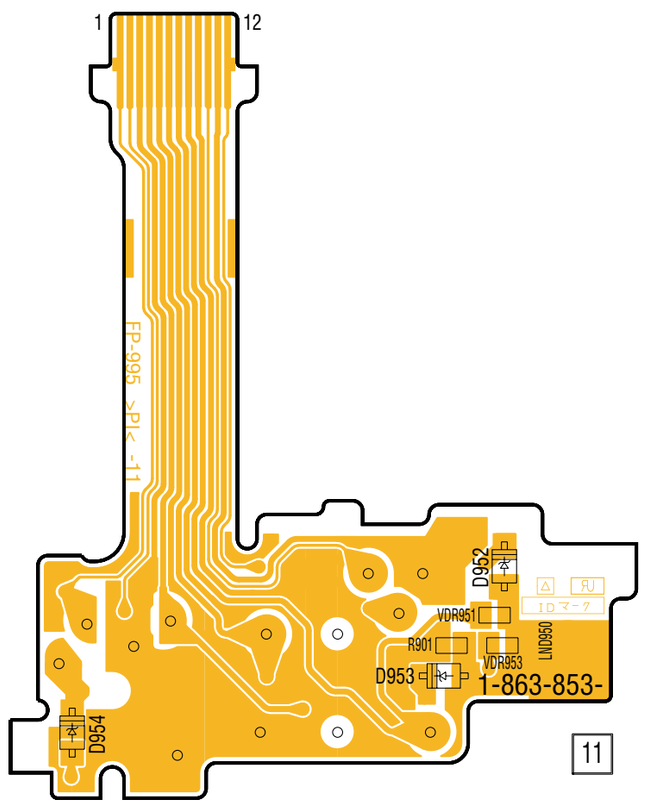


• Refer to page 4-65 for common note for printed wiring board. • : Uses unleaded solder.

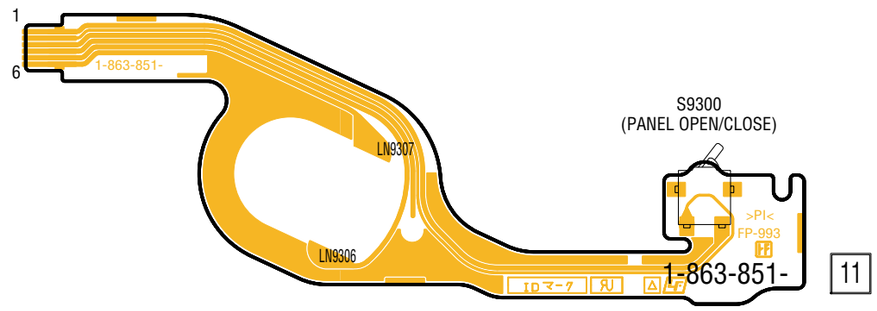
FP-994 FLEXIBLE BOARD



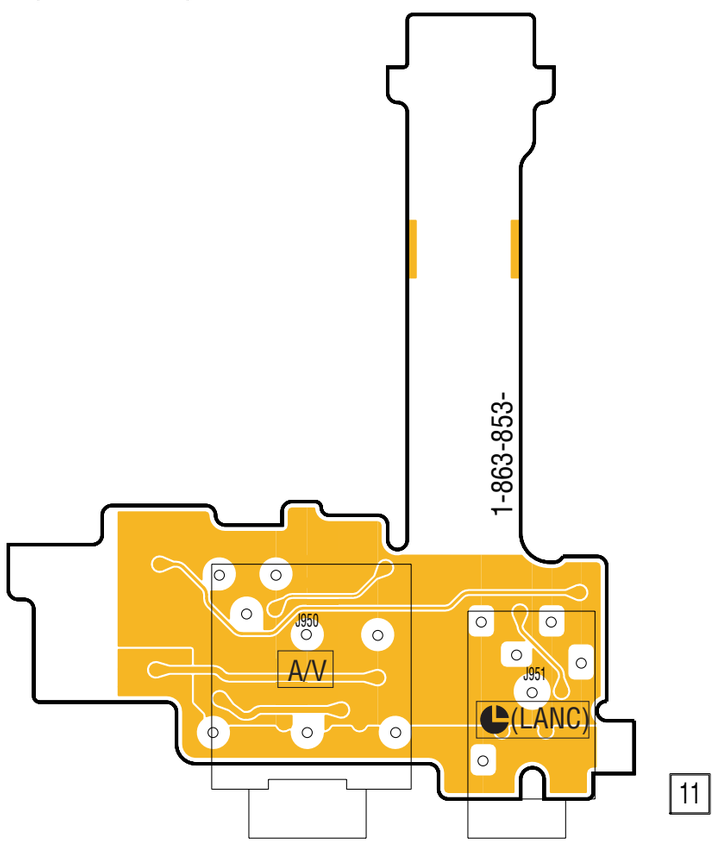
FP-995 FLEXIBLE BOARD (SIDE A)



FP-993 FLEXIBLE BOARD



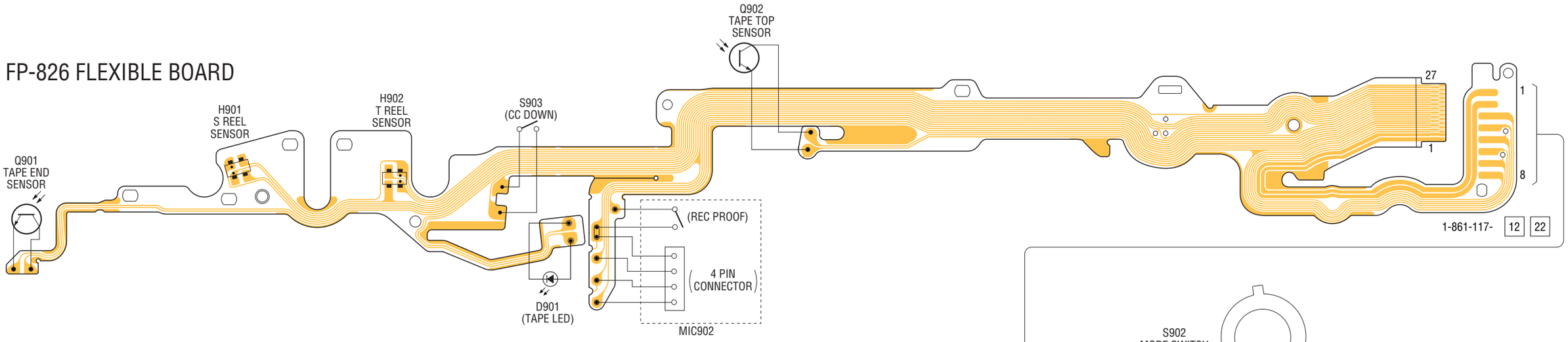
FP-995 FLEXIBLE BOARD (SIDE B)



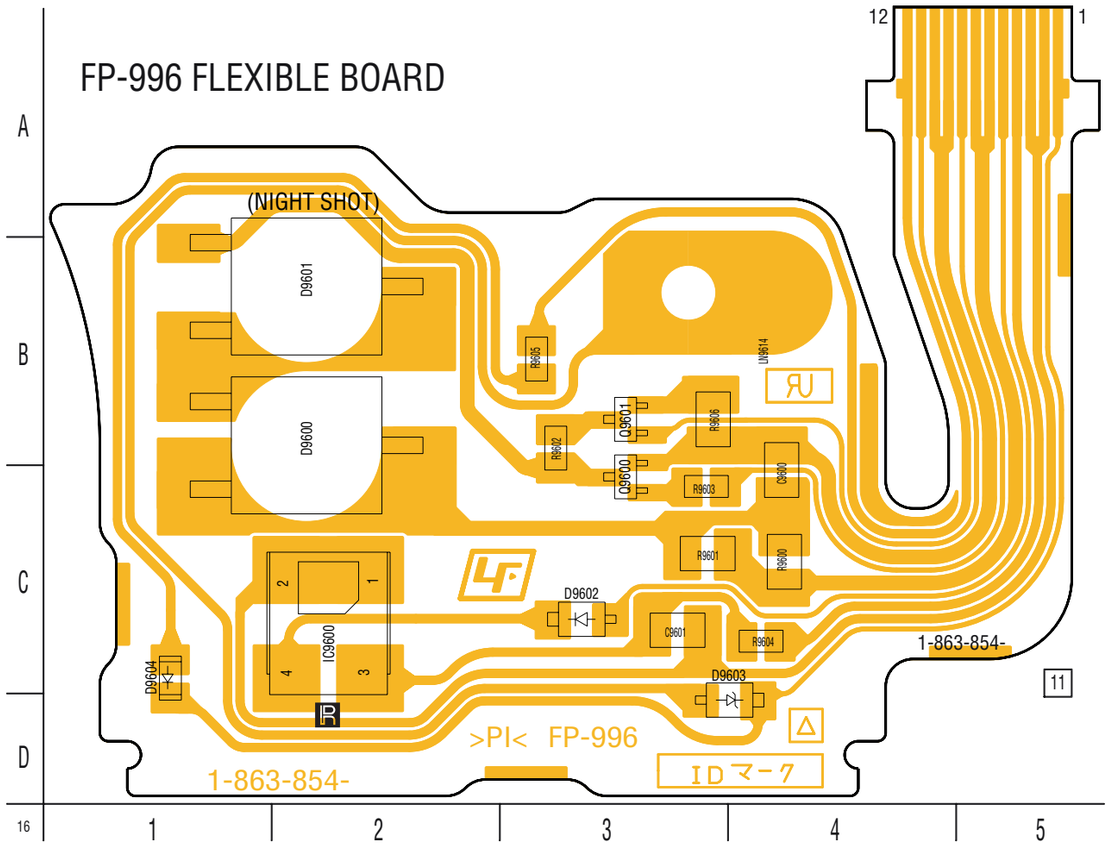
• Refer to page 4-65 for common note for printed wiring board.

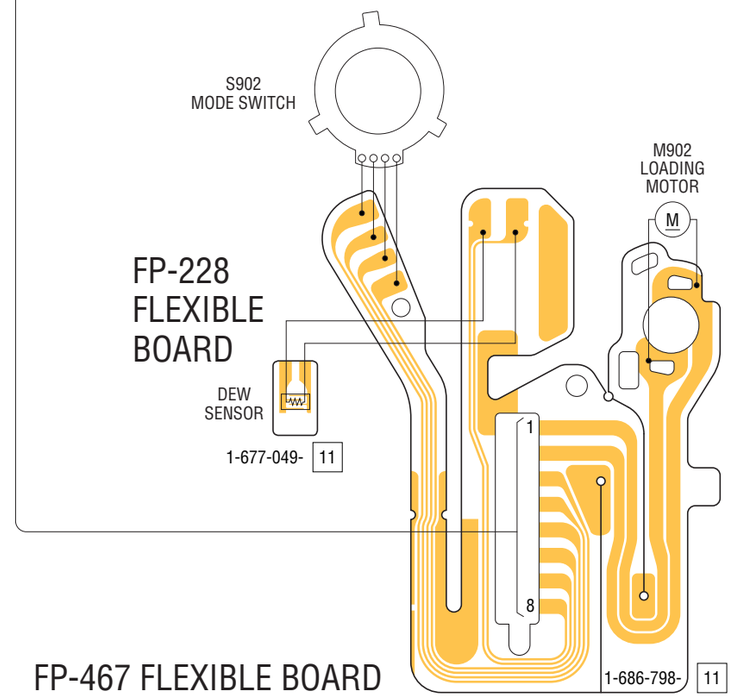
• : Uses unleaded solder.

FP-826 FLEXIBLE BOARD



FP-996 FLEXIBLE BOARD





FP-467 FLEXIBLE BOARD

Schematic diagram of the CD-537 and VC-370 board are not shown.
Pages from 4-85 to 4-92 are not shown.

4-4. MOUNTED PARTS LOCATION

MS-234 BOARD

C800	D-2	L800	C-3
C801	B-2		
C802	D-2	LND800	A-3
C803	B-2		
C804	C-2	R800	C-2
C805	C-2	R801	C-2
C806	C-2	R802	C-2
C807	C-2	R803	C-2
C808	D-2	R804	B-2
C809	C-2	R805	C-2
C810	C-2	R808	B-2
C811	C-2	R809	C-4
C812	B-2	R810	D-2
C813	D-2	R811	D-2
C814	D-2	R812	B-2
C815	B-2	R813	B-3
C816	B-2	R814	D-2
C817	D-2	R815	B-3
C818	B-2	R816	B-3
C819	D-2	R817	D-2
C820	B-2	R818	D-2
C821	C-2	R819	B-3
C822	D-2	R820	B-3
C823	D-3	R821	D-2
C824	B-3	R822	D-2
C825	B-3	R823	B-3
C826	B-3	R824	D-3
C827	D-3	R825	C-3
C828	D-3	R826	C-3
C830	C-3	R827	C-3
C832	D-3	R828	C-3
C833	D-3	R829	B-4
C835	C-4	R830	C-2
C837	B-2	R831	B-1
C838	C-1	R832	C-2
C839	B-1	R833	C-1
C840	C-1	R834	A-3
C841	C-6	R835	C-5
C842	B-4	R836	B-3
C843	B-4	R837	B-3
C844	B-4	R838	B-3
		R839	A-3
CN800	C-5	R840	B-3
CN801	B-5	R841	B-3
D800	C-6	S800	B-3
FB800	C-6	VDR800	B-4
FB801	B-3	VDR801	B-4
FB802	C-6	VDR802	B-4
FB803	B-3	VDR803	A-4
		VDR804	A-3
IC800	C-2	VDR805	B-3
IC801	C-4	VDR806	C-3
J800	C-6		

ST-108 BOARD

C500	B-1
C501	A-3
C502	A-2
C503	A-1
C504	A-3
C505	A-2
C506	B-2
CN500	B-1
CN501	B-3
CN502	A-1
D500	A-2
D9605	B-2
D9606	B-1
IC500	A-2
LND500	B-2
Q500	A-3
Q501	B-3
Q502	B-4
R501	A-3
R502	A-2
R503	A-2
R504	A-2
R505	B-3
R506	A-2
R507	A-2
R508	A-2

PD-225 BOARD

D601	C-5
D602	A-4
D603	A-4
D604	B-2
IC601	C-3
IC602	B-3
Q601	C-3
Q602	C-3
Q603	A-4
Q604	C-2
Q605	C-2
Q606	C-2
Q607	C-2
Q608	A-4
Q609	B-2
Q610	A-4

FP-996 FLEXIBLE

C9600	C-4
C9601	C-3
D9600	B-2
D9601	B-2
D9602	C-3
D9603	C-3
D9604	C-1
IC9600	C-2
LN9614	B-4
Q9600	C-3
Q9601	B-3
R9600	C-4
R9601	C-3
R9602	B-3
R9603	C-3
R9604	C-4
R9605	B-3
R9606	B-3

Mounted parts location of the CD-537 and VC-370 board are not shown.
Pages from 4-94 to 4-95 are not shown.

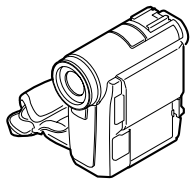
NOTE

5. REPAIR PARTS LIST

NOTE: Characters A to Z of the electrical parts list indicate location of exploded views in which the desired part is shown.

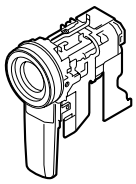
Link

EXPLODED VIEWS



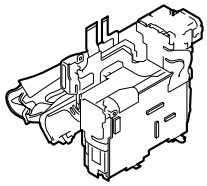
H

OVERALL SECTION



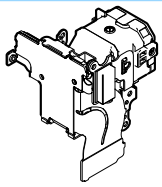
J

F PANEL/LENS SECTION



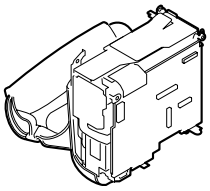
C

FK SECTION



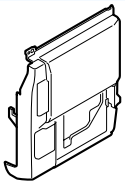
G

EVF SECTION



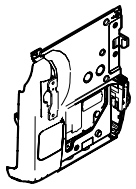
D E K

MD SECTION



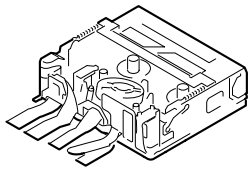
F

CABINET (R) SECTION-1

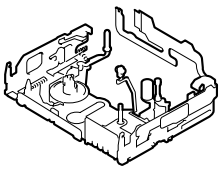


A B I

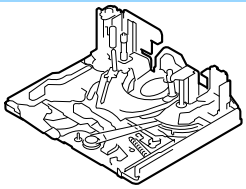
CABINET (R) SECTION-2



MECHANISM DECK OVERALL (Z200)



LS CHASSIS BLOCK ASSEMBLY



MECHANICAL CHASSIS BLOCK ASSEMBLY

Link

ELECTRICAL PARTS LIST

ACCESSORIES

CR-048 BOARD A	MS-234 BOARD E	VP-060 BOARD I
FP-994 FLEXIBLE BOARD B	PD-225 BOARD F	CD-537 BOARD J
FP-995 FLEXIBLE BOARD C	SE-151 BOARD G	VC-370 BOARD K
FP-996 FLEXIBLE BOARD D	ST-108 BOARD H	

5. REPAIR PARTS LIST

(ENGLISH)

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
  uF: μF
- COILS
  uH: μH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

(JAPANESE)

【使用上の注意】
- *印の部品は常備在庫しておりません。
- 分解図中の機構部品で, 図面番号のない部品は供給しません。
- −XX,−Xは標準化部品のため, セットに付いている部品と異なる場合があります。
- ここに記載されている部品は, 補修用部品であるため, 回路図及びセットに付いている部品と異なる場合があります。
- コンデンサの単位でuFはμFを示します。
- 抵抗の単位Ωは省略してあります。
  金　　被：金属被膜抵抗。
  サンキン：酸化金属被膜抵抗。
- インダクタの単位でuHはμHを示します。
- 半導体の名称でuA..., uPA..., uPB..., uPC..., uPD... 等はそれぞれμA..., μPA..., μPB..., μPC..., μPD...を示します。

(ENGLISH)

When indicating parts by reference number, please include the board name.

(JAPANESE)

お願い
図面番号で部品を指定するときは基板名又はブロックを併せて指定してください。

(ENGLISH/FRENCH)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

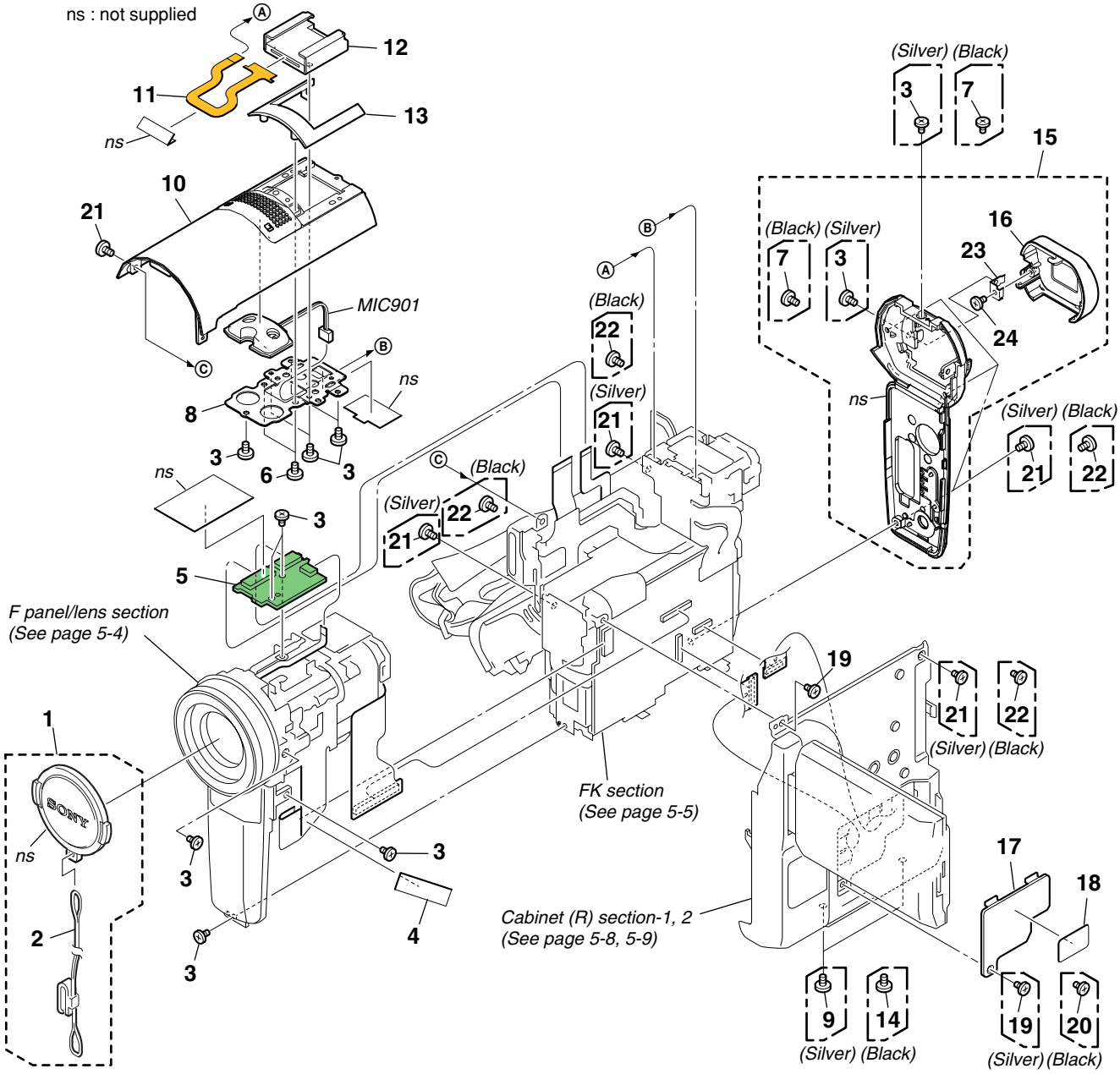
(JAPANESE)

⚠印の部品，または⚠印付の点線で囲まれた部品は，安全性を維持するために，重要な部品です。
従って交換時は, 必ず指定の部品を使用してください。

- Abbreviation
  CND : Canadian model
  AUS : Australian model
  CH : Chinese model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  EA : Saudi Arabia model

5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION

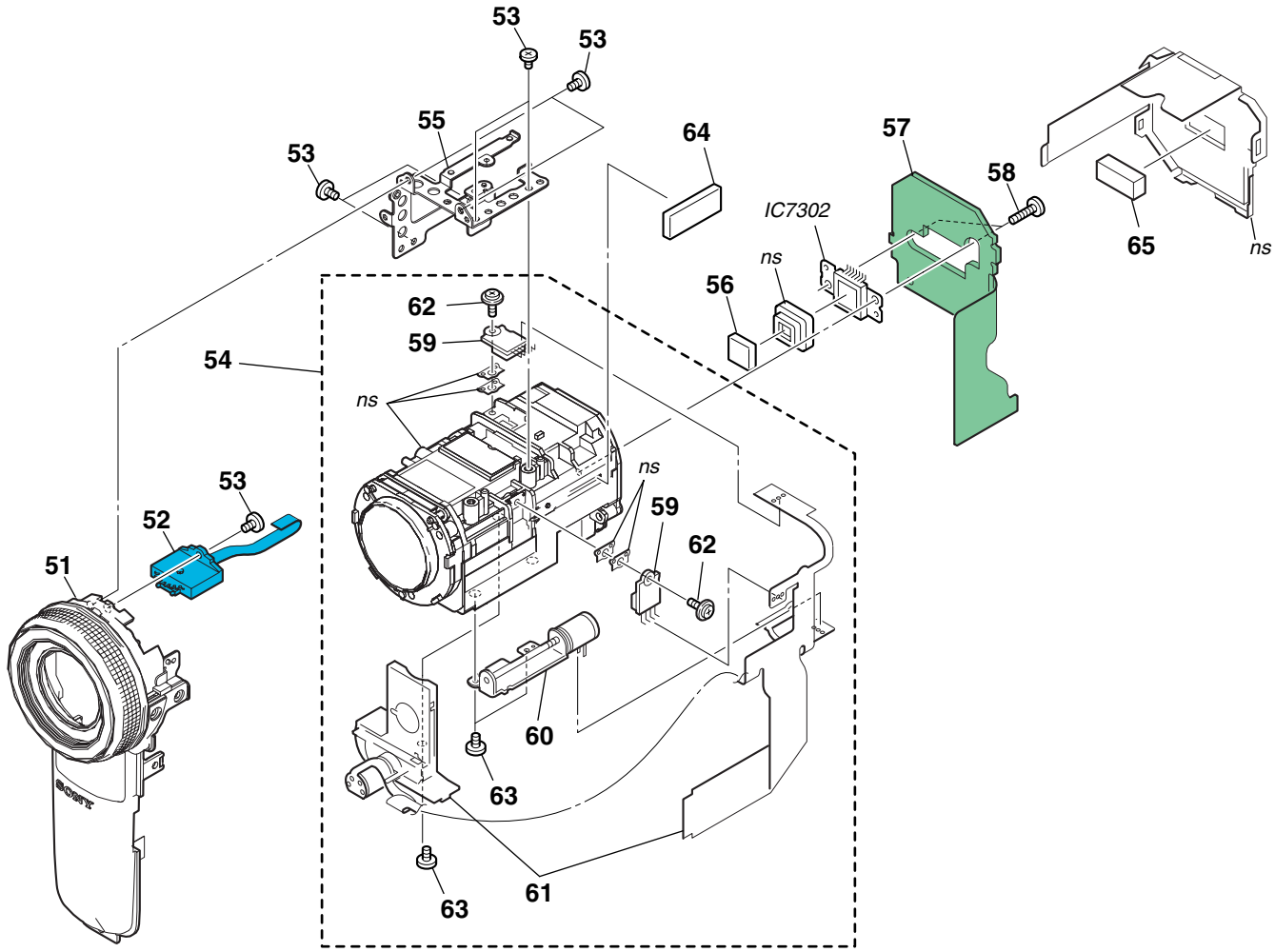


Ref. No.	Part No.	Description
1	X-2022-808-1	CAP (N) ASSY, LENS (BLACK)
1	X-2023-385-1	CAP (N2) ASSY, LENS (SILVER)
2	3-979-194-12	STRING, CAP
3	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
4	3-941-343-01	TAPE (A)
5	A-1070-198-A	ST-108 BOARD, COMPLETE
6	3-080-204-01	SCREW, TAPPING, P2
7	3-084-817-11	SCREW (M1.7), SCOTCH GRIP, P2 (BLACK)
8	2-148-560-01	FRAME, MICROPHONE
9	3-989-735-31	SCREW (M1.7), LOCK ACE, P2
10	X-2022-580-1	CABINET ASSY, TOP (BLACK)(J)
10	X-2022-992-1	CABINET ASSY, TOP (BLACK)(EXCEPT J)
10	X-2023-173-1	CABINET ASSY, TOP (SILVER)(J)
10	X-2023-499-1	CABINET ASSY, TOP (SILVER)(EXCEPT J)
11	1-863-849-11	FP-991 FLEXIBLE BOARD
12	1-793-996-11	CONNECTOR, EXTERNAL
13	2-148-592-01	COVER, SHOE (BLACK)

Ref. No.	Part No.	Description
13	2-148-592-11	COVER, SHOE (SILVER)
14	3-080-198-31	SCREW (M1.7), LOCK ACE, P2 (BLACK)
15	X-2022-581-1	CABINET (REAR) ASSY (BLACK)(J)
15	X-2022-989-1	CABINET (REAR) ASSY (BLACK)(EXCEPT J)
15	X-2023-170-1	CABINET (REAR) ASSY (SILVER)(J)
15	X-2023-171-1	CABINET (REAR) ASSY (SILVER)(EXCEPT J)
16	2-148-460-01	EYE CUP
17	2-148-572-01	LID, BT (BLACK)
17	2-148-572-11	LID, BT (SILVER)
* 18	2-283-326-01	LABEL, CAUTION (J)
19	3-263-235-01	SCREW (M1.7), SCOTCH GRIP, P2
20	3-084-817-11	SCREW (M1.7), SCOTCH GRIP, P2
21	2-187-345-11	SCREW (M1.7), SCOTCH GRIP, P2
22	3-084-817-31	SCREW (M1.7), SCOTCH GRIP, P2
23	2-148-586-01	PLATE, FIXED, EYE CUP
24	3-078-890-01	SCREW, TAPPING
MIC901	1-542-599-11	MICROPHONE UNIT

5-1-2. F PANEL/LENS SECTION

ns : not supplied



Ref. No.	Part No.	Description
51	X-2022-574-1	PANEL ASSY, F
52	1-478-837-11	SWITCH BLOCK, CONTROL (MF7450)
53	3-080-204-01	SCREW, TAPPING, P2
54	8-848-781-01	DEVICE, LENS LSV-940A
55	2-148-519-01	FRAME, LENS
56	1-758-992-11	OPTICAL FILTER BLOCK
57	A-1070-193-A	CD-537 BOARD, COMPLETE (PC350) (Note)
57	A-1070-203-A	CD-537 BOARD, COMPLETE (PC350E) (Note)
58	3-078-890-21	SCREW, TAPPING

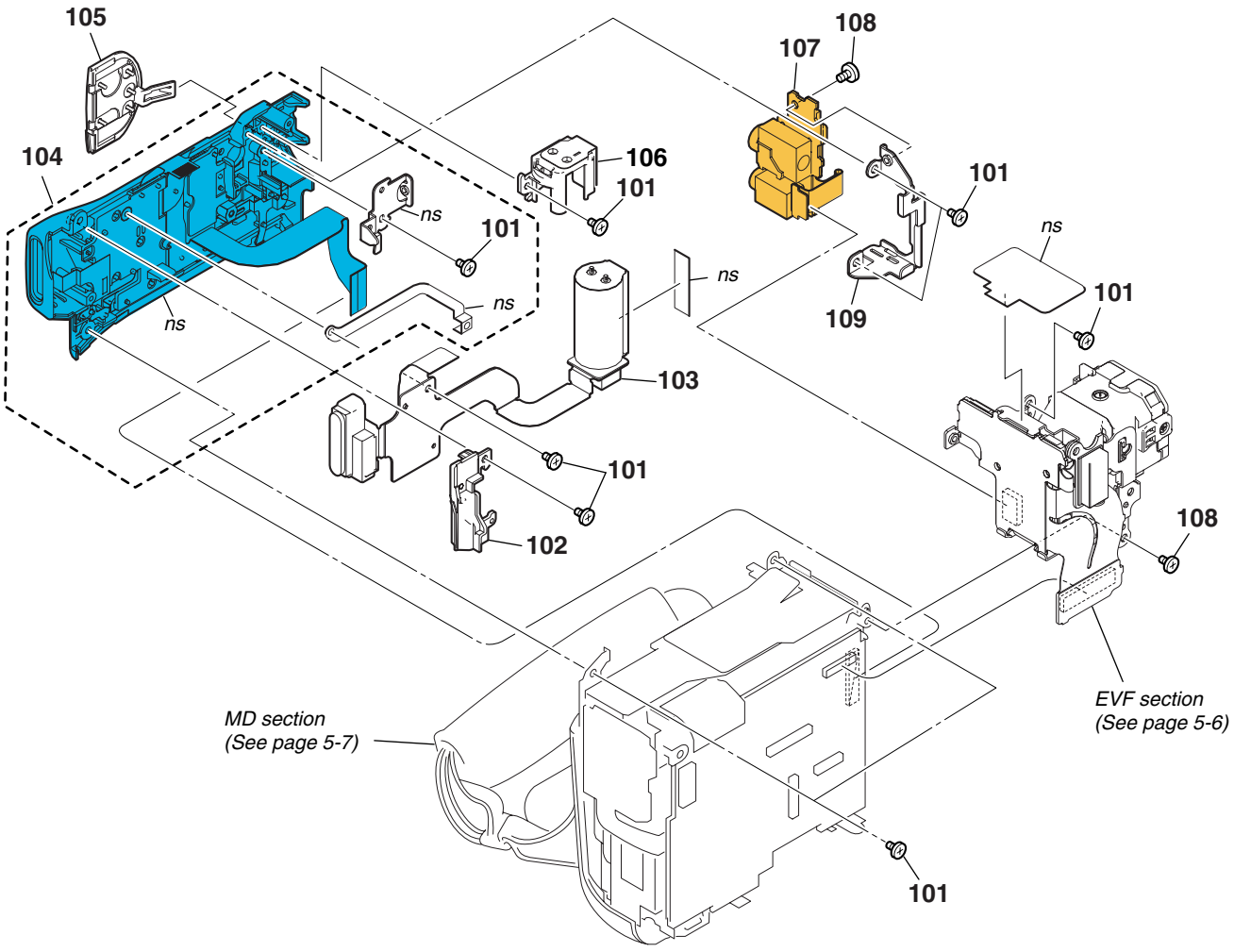
Ref. No.	Part No.	Description
59	1-477-458-11	SENSOR, GMR (M)
60	1-787-204-11	MOTOR, OPTICAL STEPPING (Z940)
61	1-788-144-11	IRIS (IR940)
62	3-087-297-01	TAPPING (M1.4)
63	3-713-791-35	SCREW(M1.7X5), TAPPING, P2
64	2-176-398-01	CUSHION, LENS
65	2-148-522-01	RUBBER (2), CD
IC7302	A-1075-101-A	CCD BLOCK ASSY (CCD IMAGER) (IC7302 is not included in the CD-537 COMPLETE board.)

(Note: IC7302 is not included in this COMPLETE board.)

Be sure to read “Precautions upon replacing CCD imager” on page 4-7 when changing the CCD imager.
CCDイメージャの交換時はサービスマニュアル 4-8 ページの “CCDイメージャ交換時の注意” を必ずお読みください。

5-1-3. FK SECTION

ns : not supplied



Ref. No.	Part No.	Description
101	3-080-204-01	SCREW, TAPPING, P2
102	2-148-561-01	COVER, STROBOSCOPE (BLACK)
102	2-148-561-11	COVER, STROBOSCOPE (SILVER)
⚠103	1-478-839-11	STROBOSCOPE UNIT (FL7450)
104	1-478-835-11	SWITCH BLOCK, CONTROL (FK7450) (SILVER)(J)
104	1-478-835-21	SWITCH BLOCK, CONTROL (FK7450) (SILVER) (EXCEPT J)
104	1-478-835-31	SWITCH BLOCK, CONTROL (FK7450) (BLACK)(J)
104	1-478-835-41	SWITCH BLOCK, CONTROL (FK7450) (BLACK) (EXCEPT J)
105	X-2022-583-1	COVER (L) ASSY, JACK (BLACK)
105	X-2023-169-1	COVER (L) ASSY, JACK (SILVER)
106	X-2022-807-1	HOLDER, CAPACITOR ASSY
107	A-1070-201-A	FP-995 BOARD, COMPLETE
108	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
109	2-148-562-01	FRAME, JK

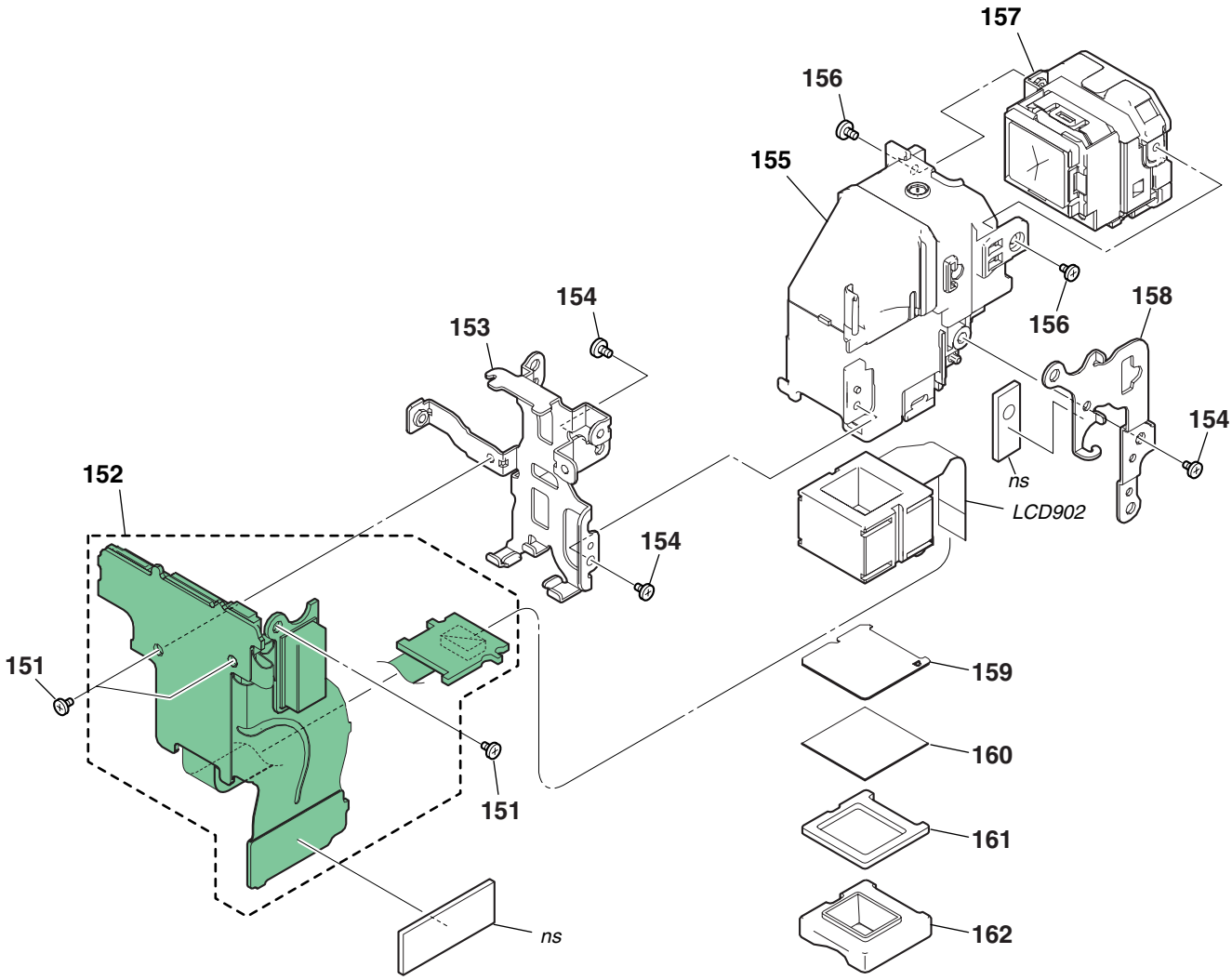
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

⚠印の部品，または⚠印付の点線で囲まれた部品は，安全性を維持するために，重要な部品です。
従って交換時は，必ず指定の部品を使用してください。

5-1-4. EVF SECTION

ns : not supplied

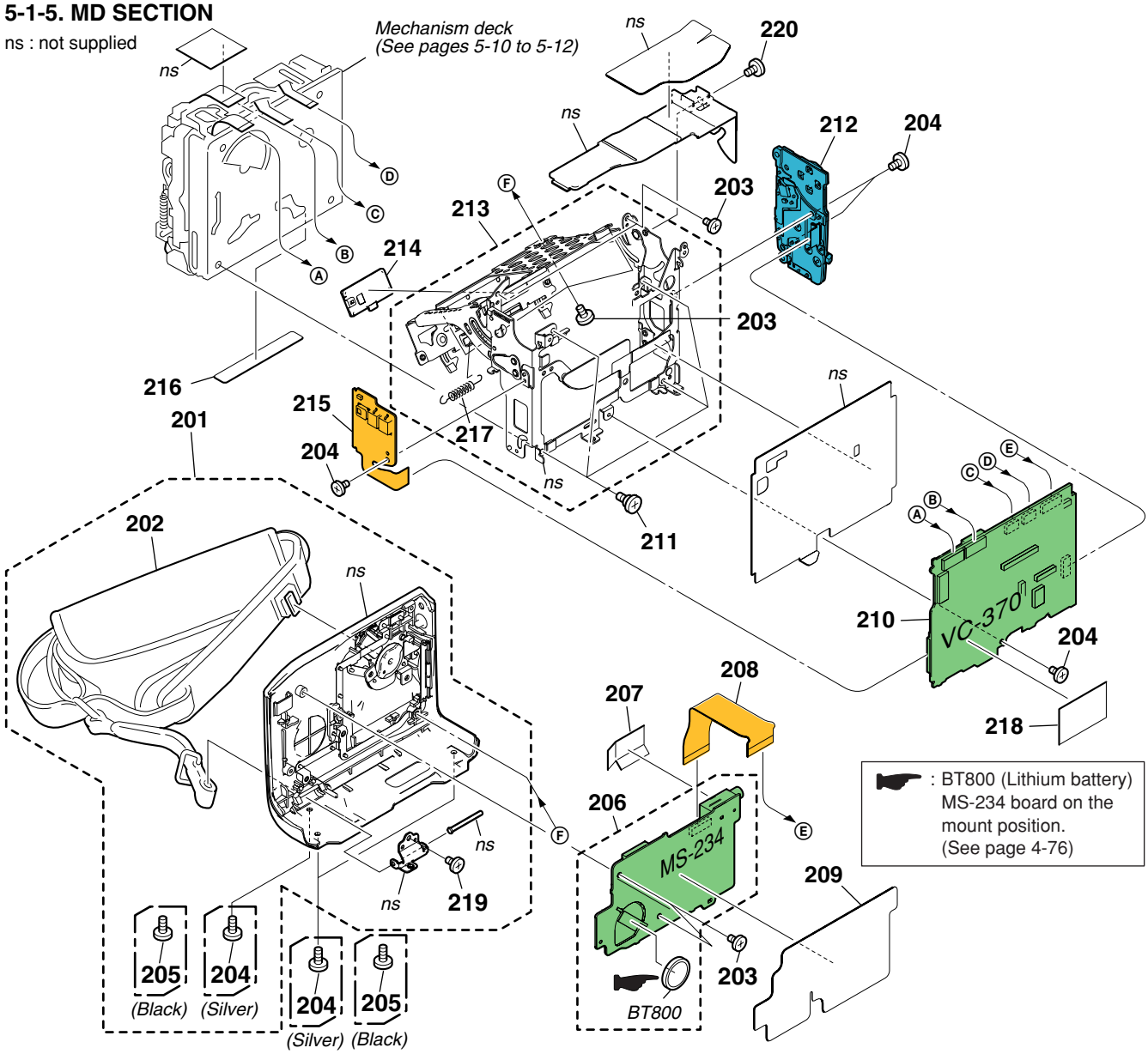


Ref. No.	Part No.	Description
151	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
152	A-1070-195-A	SE-151 BOARD, COMPLETE
153	2-148-555-01	FRAME, VF
154	3-080-204-01	SCREW, TAPPING, P2
155	X-2022-579-1	HOLDER ASSY, LCD
156	3-086-251-11	SCREW (M1.4), SPECIAL HEAD
157	X-2022-578-1	LENS ASSY, VF

Ref. No.	Part No.	Description
158	2-148-571-01	FRAME, SE
159	3-089-446-01	SHEET, PRISM
160	3-089-445-01	ILLUMINATOR
161	3-089-448-01	CUSHION, LB
162	3-089-447-01	GUIDE, LAMP
LCD902	8-753-221-28	LCX059BKEB-1

5-1-5. MD SECTION

ns : not supplied



Ref. No.	Part No.	Description
201	X-2022-575-1	CABINET (G) ASSY (BLACK)(J)
201	X-2022-991-1	CABINET (G) ASSY (BLACK)(EXCEPT J)
201	X-2023-165-1	CABINET (G) ASSY (SILVER)(J)
201	X-2023-166-1	CABINET (G) ASSY (SILVER)(EXCEPT J)
202	X-2022-806-1	BELT ASSY, GRIP (BLACK)
202	X-2023-172-1	BELT ASSY, GRIP (SILVER)
203	3-080-204-01	SCREW, TAPPING, P2
204	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
205	3-080-198-11	SCREW (M1.7), LOCK ACE, P2 (BLACK)
206	A-1070-197-A	MS-234 BOARD, COMPLETE
207	2-178-954-01	SHEET (B), MS
208	1-863-850-11	FP-992 FLEXIBLE BOARD
209	2-148-543-01	SHEET, G
210	A-1073-284-A	VC-370 BOARD, COMPLETE (SERVICE)
211	3-062-214-01	SCREW (M1.4X1.5)
212	1-478-836-11	SWITCH BLOCK, CONTROL (PS7450)
213	X-2022-577-1	FRAME ASSY, MD
214	3-075-309-01	KNOB, EJECT (BLACK)
214	3-075-309-11	KNOB, EJECT (SILVER)
215	A-1070-202-A	FP-996 BOARD, COMPLETE

Ref. No.	Part No.	Description
216	3-081-221-01	LABEL (Z), LS
217	3-954-730-01	SPRING, TENSION
218	2-190-722-01	SHEET (VC) (EXCEPT CH)
219	3-078-890-01	SCREW, TAPPING
220	3-084-817-11	SCREW (M1.7), SCOTCH GRIP, P2
⚠ BT800	1-756-128-11	BATTERY, LITHIUM (SECONDARY)

CAUTION :	**注　意**
Danger of explosion if battery is incorrectly replaced. Replace only with the same ore equivalent type.	電池の交換は，正しく行わないと破裂する可能性があります。電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

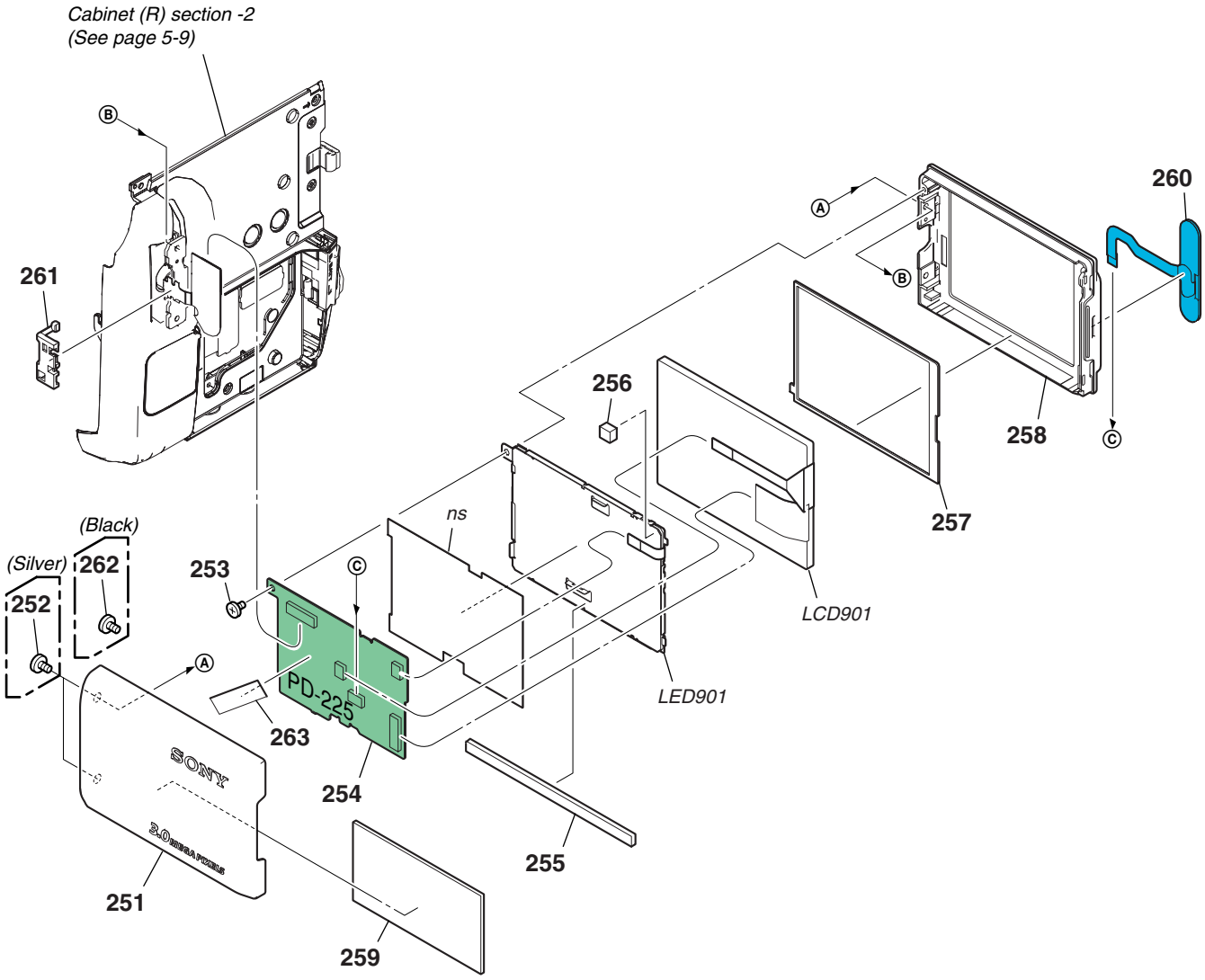
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

⚠印の部品，または⚠印付の点線で囲まれた部品は，安全性を維持するために，重要な部品です。
従って交換時は，必ず指定の部品を使用してください。

5-1-6. CABINET (R) SECTION-1

ns : not supplied

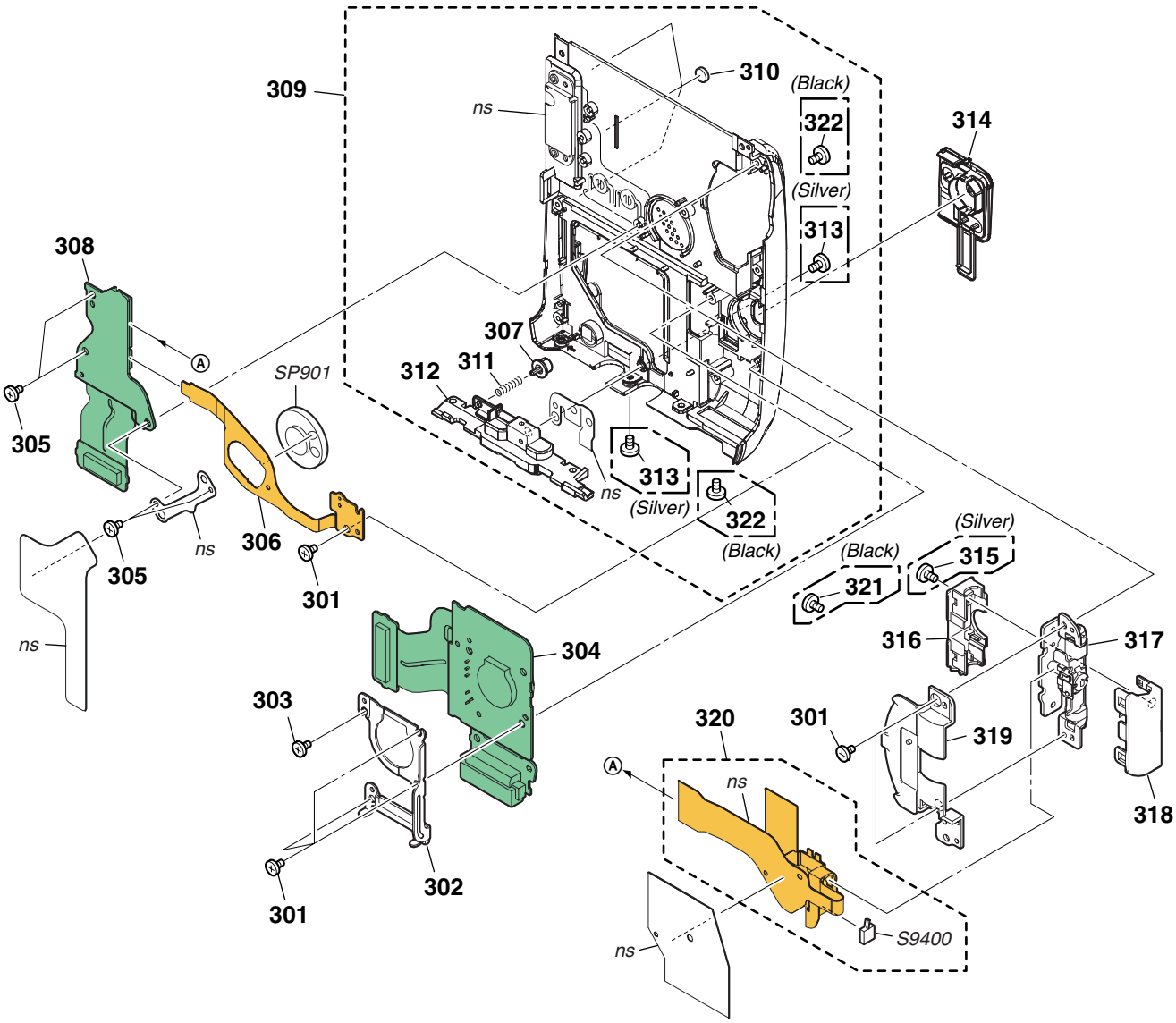


Ref. No.	Part No.	Description
251	2-148-488-01	CABINET (R), P (BLACK) (P350: J)
251	2-148-488-11	CABINET (R), P (BLACK) (P350E)
251	2-148-488-21	CABINET (R), P (BLACK) (P350: EXCEPT J)
251	2-148-488-31	CABINET (R), P (SILVER) (P350: J)
251	2-148-488-41	CABINET (R), P (SILVER) (P350: EXCEPT J)
251	2-148-488-51	CABINET (R), P (SILVER) (P350E)
252	3-989-735-31	SCREW (M1.7), LOCK ACE, P2 (SILVER)
253	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
254	A-1070-199-A	PD-225 BOARD, COMPLETE
255	2-148-579-01	CUSHION, BL
256	2-148-475-01	CUSHION (2), BL

Ref. No.	Part No.	Description
257	2-149-711-01	CUSHION, TP
258	2-148-491-01	CABINET (L), P (BLACK)
258	2-148-491-11	CABINET (L), P (SILVER)
259	3-090-063-02	SHEET, P
260	1-478-838-11	SWITCH BLOCK, CONTROL (SB7450) (J)
260	1-478-838-21	SWITCH BLOCK, CONTROL (SB7450) (EXCEPT J)
261	2-148-495-01	CLAMP, FLEXIBLE
262	3-080-198-31	SCREW (M1.7), LOCK ACE, P2 (BLACK)
263	3-941-343-01	TAPE (A)
LCD901	8-753-224-38	ACX528AKQ-J
LED901	1-478-462-11	BLOCK, LIGHT GUIDE PLATE (2.5)

5-1-7. CABINET (R) SECTION-2

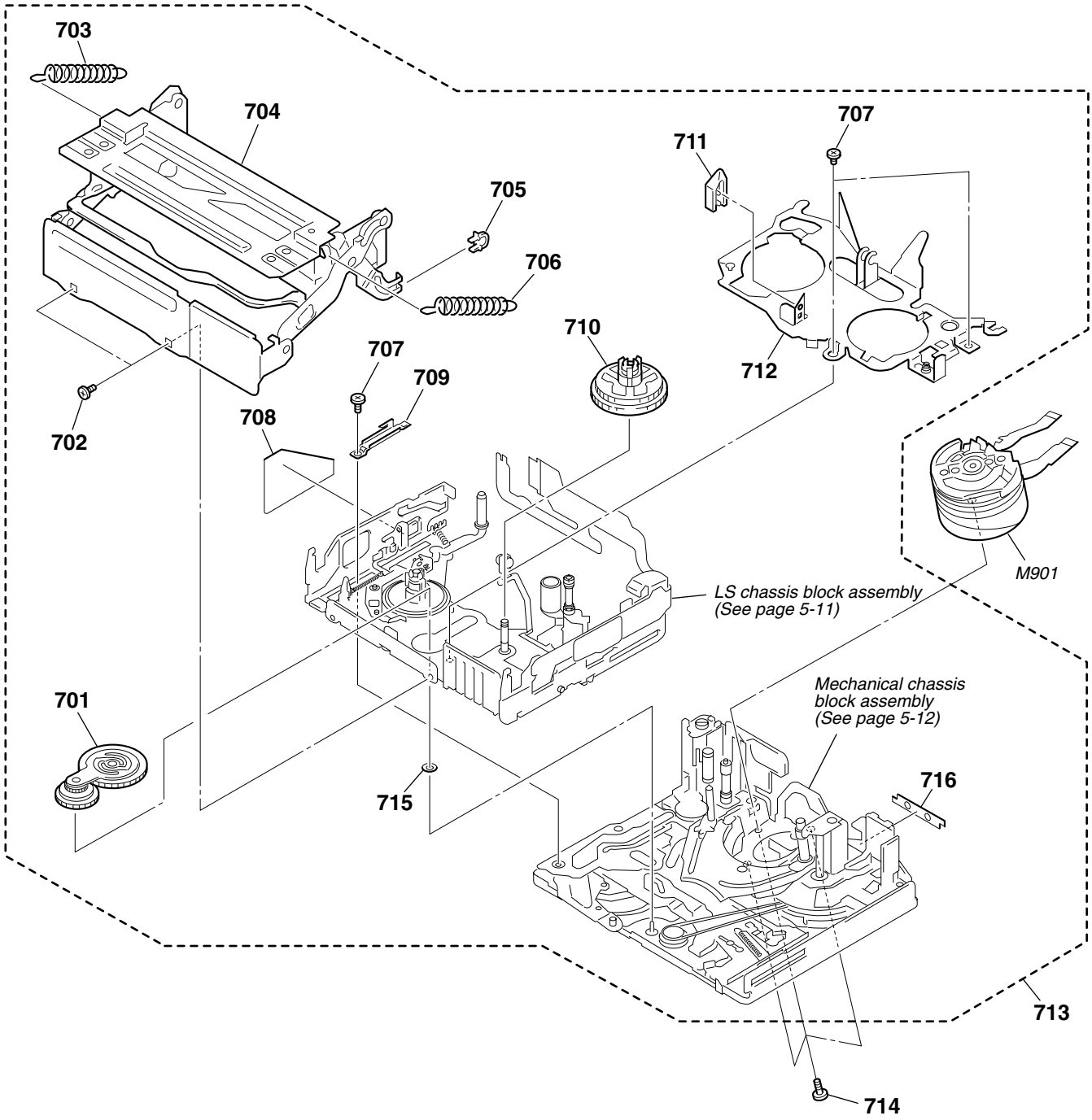
ns : not supplied



Ref. No.	Part No.	Description
301	3-080-204-01	SCREW, TAPPING, P2
302	2-148-499-01	FRAME, CR
303	3-078-890-21	SCREW, TAPPING
304	A-1070-194-A	CR-048 BOARD, COMPLETE (CN8501 is included in this COMPLETE board.)
305	3-085-397-01	SCREW
306	1-863-851-21	FP-993 FLEXIBLE BOARD
307	3-089-930-01	LIFTER, BT (SILVER)
307	3-089-930-11	LIFTER, BT (BLACK)
308	A-1070-196-A	VP-060 BOARD, COMPLETE
309	X-2022-571-1	CABINET (R) ASSY (BLACK)(J)
309	X-2022-990-1	CABINET (R) ASSY (BLACK)(EXCEPT J)
309	X-2023-167-1	CABINET (R) ASSY (SILVER)(J)
309	X-2023-168-1	CABINET (R) ASSY (SILVER)(EXCEPT J)
310	3-085-260-01	CUSHION, PANEL
311	3-089-931-01	SPRING, LIFTER
312	3-089-938-01	FRAME, BOTTOM

Ref. No.	Part No.	Description
313	3-989-735-31	SCREW (M1.7), LOCK ACE, P2 (SILVER)
314	X-2022-584-1	COVER (R) ASSY, JACK (BLACK)
314	X-2023-174-1	COVER (R) ASSY, JACK (SILVER)
315	3-263-235-01	SCREW (M1.7), SCOTCH GRIP, P2 (SILVER)
316	2-148-471-01	COVER (REAR), HINGE (BLACK)
316	2-148-471-11	COVER (REAR), HINGE (SILVER)
317	X-3954-070-1	HINGE (63) ASSY
318	2-148-470-01	FRONT, HINGE COVER (BLACK)
318	2-148-470-11	FRONT, HINGE COVER (SILVER)
319	2-148-494-01	BLIND, HINGE (BLACK)
319	2-148-494-11	BLIND, HINGE (SILVER)
320	A-1070-200-A	FP-994 BOARD, COMPLETE
321	3-084-817-11	SCREW (M1.7), SCOTCH GRIP, P2 (BLACK)
322	3-080-198-31	SCREW (M1.7), LOCK ACE, P2 (BLACK)
S9400	1-786-179-31	SWITCH, PUSH (1KEY) (PANEL REVERSE)
SP901	1-825-262-11	LOUD SPEAKER (1.6CM)

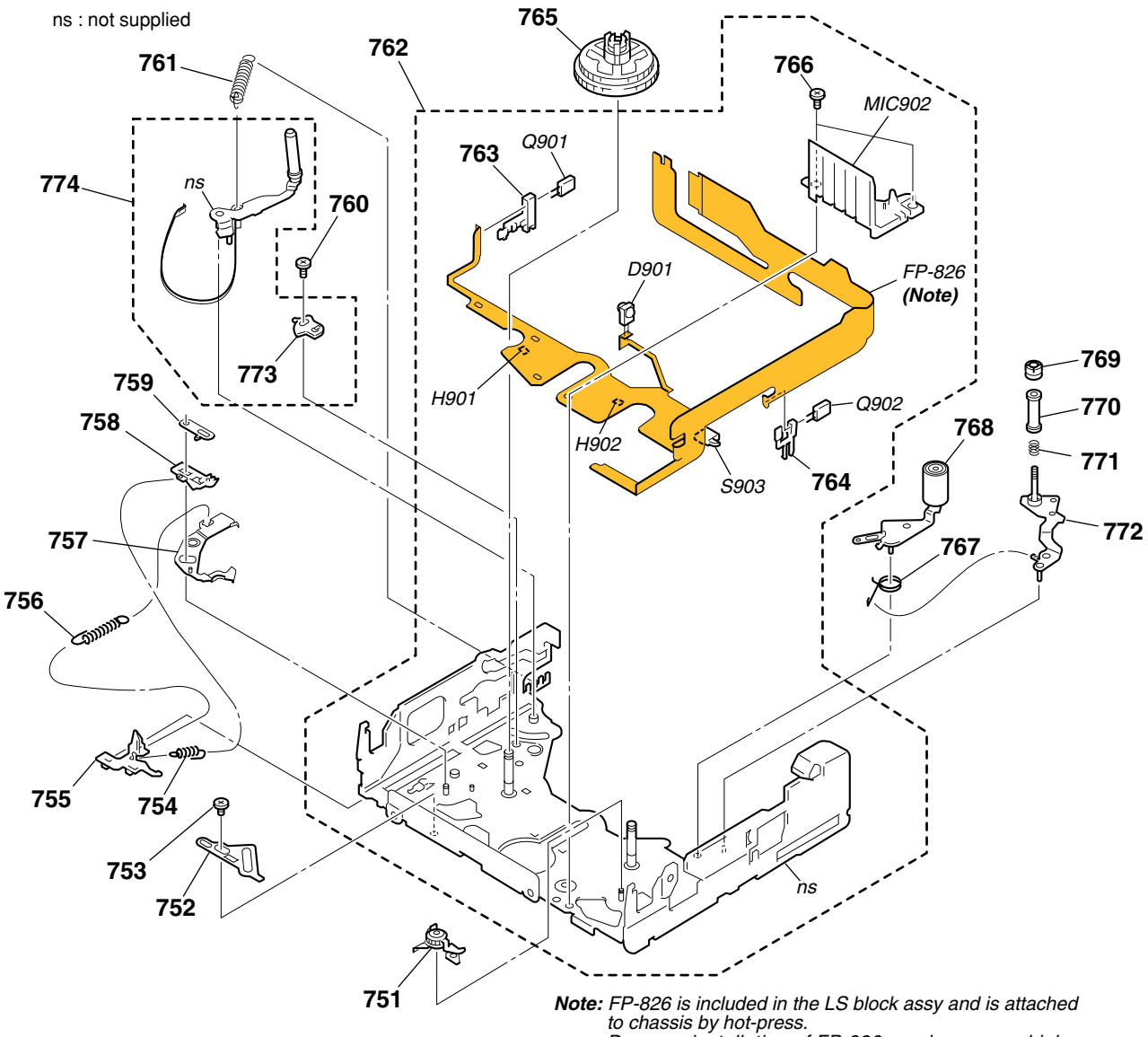
5-1-8. MECHANISM DECK OVERALL (Z200)



Ref. No.	Part No.	Description
701	X-3952-938-6	GEAR ASSY, GOOSENECK
702	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
703	3-079-206-02	SPRING (POP UP S), TXTENSION
704	X-3952-939-3	COMPARTMENT ASSY, CASSETTE
705	3-079-367-01	DAMPER, CASSETTE COMPARTMENT
706	3-079-215-02	SPRING (POP UP T), EXTENSION
707	3-085-330-01	SCREW, SPECIAL
708	3-080-545-01	COVER, SENSOR S
709	3-079-364-01	RETAINER, LS GUIDE
710	X-3952-937-1	TABLE ASSY, T REEL
711	3-079-366-01	RELEASE, REEL LOCK
712	X-3953-257-1	PLATE ASSY, RETAINER
713	A-7095-947-A	MD (Z200) SUB ASSY
714	3-079-741-02	SCREW, DRUM FIXING
715	3-748-682-01	WASHER, T
716	3-087-881-01	SHEET, ADHESIVE, FLEXIBLE
M901	A-7048-994-A	DRUM (DEH-30B-R)

5-1-9. LS CHASSIS BLOCK ASSEMBLY

ns : not supplied



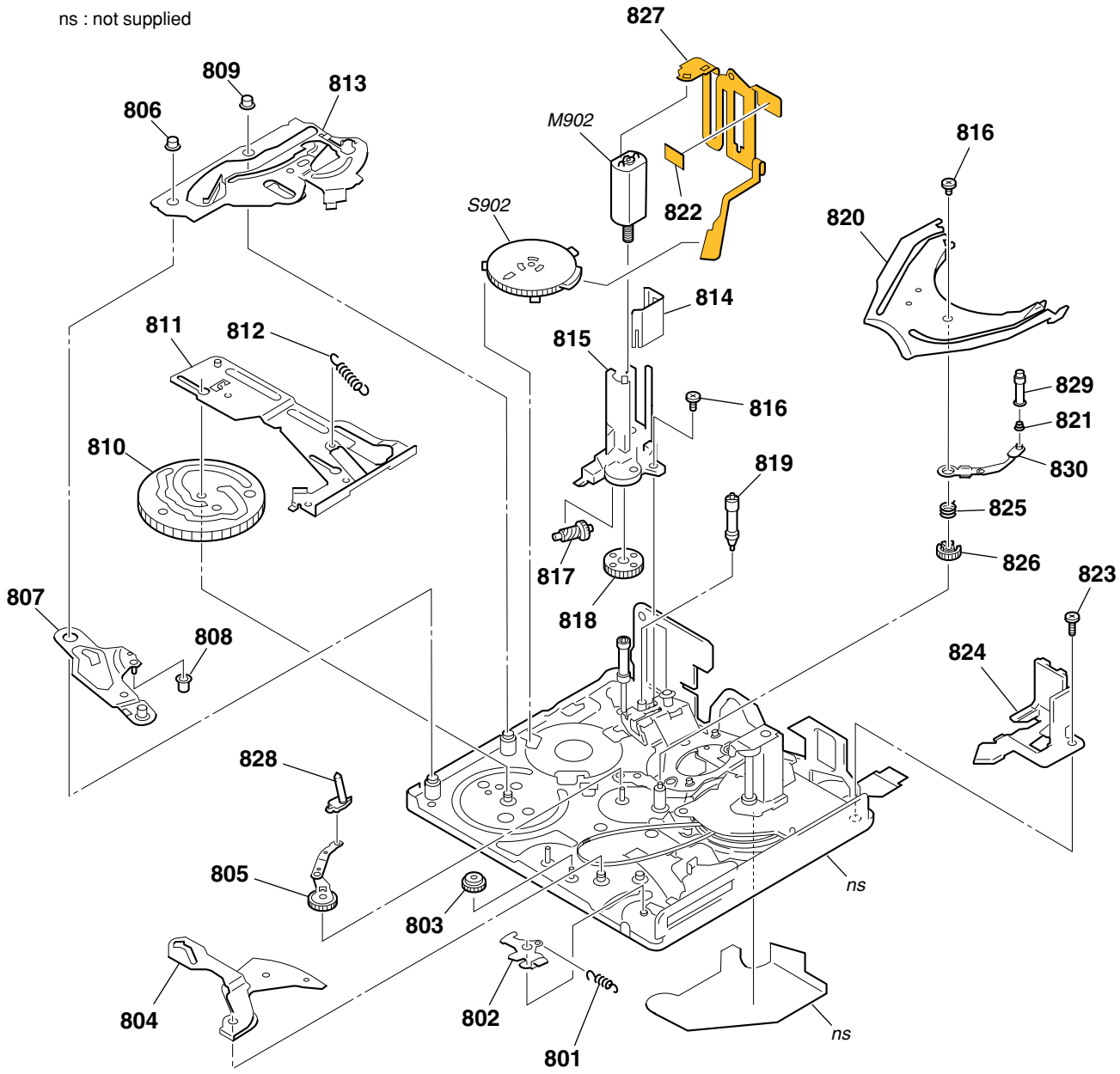
Note: *FP-826 is included in the LS block assy and is attached to chassis by hot-press.*
Because installation of FP-826 requires a very high accuracy, FP-826 is not supplied as an independent service parts.

Ref. No.	Part No.	Description
751	A-7095-402-B	BRAKE (T) BLOCK ASSY
752	3-079-241-01	PLATE, LS CAM
753	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
754	3-079-246-01	SPRING (RELEASE RACK), EXTENSION
755	3-079-248-01	POSITIONING (S), CASSETTE
756	3-079-244-01	SPRING (ULE), EXTENSION
757	X-3952-932-1	BRAKE ASSY, ULE
758	3-079-245-01	RACK (S), RELEASE
759	3-079-247-01	BRAKE (S)
760	3-059-090-11	SCREW (M1.4X2.5), SPECIAL HEAD
761	2-187-714-01	SPRING, TENSION
762	A-7095-951-A	LS BLOCK ASSY
763	3-079-267-01	HOLDER (S), SENSOR
764	3-079-268-01	HOLDER (T), SENSOR
765	X-3952-936-2	TABLE ASSY, S REEL
766	3-085-330-01	SCREW, SPECIAL

Ref. No.	Part No.	Description
767	3-079-243-02	SPRING (PINCH RETURN), TORSION
768	X-3952-934-1	ARM ASSY, PINCH
769	3-052-062-02	NUT, TG7
770	3-079-219-02	TG7
771	3-081-591-01	SPRING, COMPRESSION (TG7)
772	X-3952-935-3	ARM ASSY, TG7
773	3-079-237-01	ADJUSTOR, BAND
774	A-7095-403-B	TG2 ARM BLOCK ASSY
D901	6-500-652-01	DIODE GL453SE0000F (TAPE LED)
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)
MIC902	1-817-175-12	PIN, CONNECTOR (WITH DETECTION SWITCH)
Q901	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE END)
Q902	6-550-672-01	TRANSISTOR PT4850FJE00F (TAPE TOP)
S903	1-529-566-51	SWITCH, PUSH (1 KEY) (C.C.DOWN)

5-1-10. MECHANICAL CHASSIS BLOCK ASSEMBLY

ns : not supplied



Ref. No.	Part No.	Description
801	3-079-314-01	SPRING (EJ), EXTENSION
802	3-079-327-01	ARM, EJ
803	3-079-323-01	GEAR, CONVERSION
804	3-079-324-01	ARM, GL DRIVING
805	X-3952-928-1	GL (S) ASSY
806	3-079-315-01	ROLLER (S1), LS GUIDE
807	X-3952-925-1	ARM ASSY, LS
808	3-079-320-01	ROLLER, LS
809	3-079-316-01	ROLLER (S2), LS GUIDE
810	3-079-319-01	GEAR, CAM
811	X-3952-941-1	SLIDER ASSY, M
812	3-079-321-02	SPRING (PINCH), EXTENSION
813	X-3952-940-2	PLATE ASSY, TG2 CAM
814	3-079-312-01	SHIELD, MOTOR
815	3-079-307-02	HOLDER, MOTOR
816	3-085-330-01	SCREW, SPECIAL

Ref. No.	Part No.	Description
817	3-079-308-01	SHAFT, WORM
818	3-079-309-01	GEAR, DECELERATION
819	X-3952-942-2	ROLLER ASSY, TG3
820	3-079-325-01	RAIL, GUIDE
821	3-079-295-02	SPRING, TG5
822	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)
823	3-079-328-01	SCREW(M1.4), SPECIAL HEAD
824	3-079-326-02	SUPPORT, TG7
825	3-079-301-01	SPRING (GLT), TORSION
826	3-079-298-01	GEAR (T), GL
827	1-686-798-11	FP-467 FLEXIBLE BOARD
828	X-3952-927-2	COASTER (S) ASSY
829	X-3952-930-3	ROLLER ASSY, TG5
830	X-3952-929-1	COASTER (T) ASSY
M902	A-7095-396-A	MOTOR BLOCK ASSY, L (LOADING)
S902	1-477-679-11	ROTARY, ENCODER (MODE SWITCH)

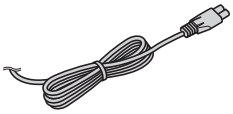
5. REPAIR PARTS LIST

• EXCEPT J MODEL

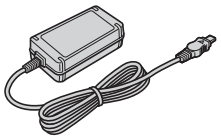
Checking supplied accessories.

to J MODEL

Make sure that the following accessories are supplied with your camcorder.

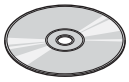


Power cord (Main lead) (1)
(E, AEP model)
⚠ 1-769-608-11
Power cord (Main lead) (1)
(CH model)
⚠ 1-782-476-13
Power cord (Main lead) (1)
(UK, HK, E model)
⚠ 1-783-374-11
Power cord (Main lead) (1)
(US, CND model)
⚠ 1-790-107-22
Power cord (Main lead) (1)
(JE model)
⚠ 1-790-732-12
Power cord (Main lead) (1)
(KR model)
⚠ 1-776-985-11
Power cord (Main lead) (1)
(AUS model)
⚠ 1-827-945-11

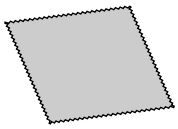


AC Adaptor
(AC-L25A/L25B) (1)
⚠ 1-477-534-11

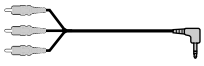
USB cable (1)
1-827-038-11



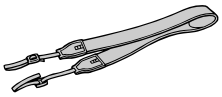
CD-ROM
(SPVD-012 (V) USB Driver) (1)
(US, CND model)
3-086-790-01
CD-ROM
(SPVD-012 USB Driver) (1)
(EXCEPT US,CND model)
3-087-821-01



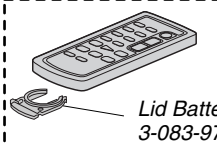
Cleaning Cloth (1)
3-073-861-01



A/V connecting cable (1)
1-824-097-11

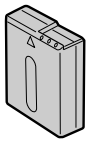


Shoulder strap (1)
2-176-235-01

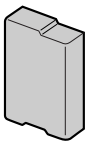


Lid Battery Case
3-083-973-01

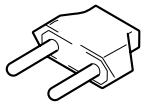
Wireless Remote Commander
(RMT-831) (1)
1-477-898-41



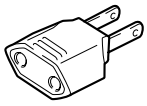
Rechargeable battery pack
(NP-FF51)(Silver) (1)
(E, KR, JE, HK model)
A-7097-021-A
Rechargeable battery pack
(NP-FF51)(Silver) (1)
(CH model)
A-7097-022-A
Rechargeable battery pack
(NP-FF51)(Black) (1)
(not supplied)



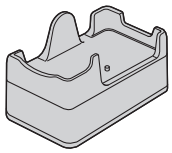
Battery terminal cover (Black) (1)
3-070-945-01
Battery terminal cover (Silver) (1)
3-070-945-11



2-pin conversion adaptor (1)
(JE model)
1-569-007-12

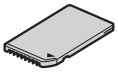


2-pin conversion adaptor (1)
(E, HK model)
1-569-008-12

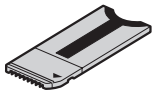


Handycam station
(DCRA-C111) (1)
1-818-213-21

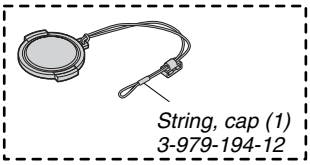
21-pin adaptor (1)
(AEP, UK model)
1-770-783-21



"Memory Stick Duo" (1)
(not supplied)



Memory Stick Duo adaptor (1)
(not supplied)



String, cap (1)
3-979-194-12

Lens cap (Black) (1)
X-2022-808-1
Lens cap (Silver) (1)
X-2023-385-1

• Abbreviation
CND : Canadian model
AUS : Australian model
CH : Chinese model
HK : Hong Kong model
KR : Korea model
JE : Tourist model
EA : Saudi Arabia model

Other accessories

2-050-779-11 MANUAL, INSTRUCTION (ENGLISH)(PC350:US,CND,E,JE)
2-050-779-21 MANUAL, INSTRUCTION (FRENCH)(PC350:CND)
2-050-779-31 MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (PC350:E,JE)
2-050-779-41 MANUAL, INSTRUCTION (TARADITIONAL CHINESE) (PC350:E)
2-050-779-51 MANUAL, INSTRUCTION (KOREAN)(PC350:KR,JE)

2-103-201-11 MANUAL, INSTRUCTION (ENGLISH)(PC350E: EXCEPT CH)
2-103-201-21 MANUAL, INSTRUCTION (FRENCH)(PC350E:AEP)
2-103-201-31 MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (PC350E:AEP)
2-103-201-41 MANUAL, INSTRUCTION (ITALIAN/GREEK)(PC350E:AEP)
2-103-201-51 MANUAL, INSTRUCTION (GERMAN/DUTCH)(PC350E:AEP)

2-103-201-61 MANUAL, INSTRUCTION (RUSSIAN)(PC350E:E,JE)
2-103-201-71 MANUAL, INSTRUCTION (ARABIC/PERSIAN)(PC350E:E)
2-103-201-81 MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (PC350E:E,JE,CH)
2-103-201-91 MANUAL, INSTRUCTION (TARADITIONAL CHINESE) (PC350E:HK)
3-087-936-11 MANUAL (PC), INSTRUCTION (ENGLISH) (PC350:US,CND,E,JE/PC350E:AEP,UK,E,HK,JE,AUS)
3-087-936-21 MANUAL (PC), INSTRUCTION (FRENCH) (PC350:CND/PC350E:AEP)
3-087-936-31 MANUAL (PC), INSTRUCTION (GERMAN/DUTCH) (PC350E:AEP)
3-087-936-41 MANUAL (PC), INSTRUCTION (SPANISH/PORTUGUESE)(PC350:E,JE/PC350E:AEP)
3-087-936-51 MANUAL (PC), INSTRUCTION (ITALIAN/GREEK) (PC350E:AEP)
3-087-936-61 MANUAL (PC), INSTRUCTION (SWEDISH/RUSSIAN) (PC350E:E,JE)

3-087-937-11 MANUAL (PC), INSTRUCTION (ARABIC/PERSIAN) (PC350E:E)
3-087-937-21 MANUAL (PC), INSTRUCTION (TARADITIONAL CHINESE)(PC350:E/PC350E:HK)
3-087-937-31 MANUAL (PC), INSTRUCTION (SIMPLIFIED CHINESE)(PC350E:E,JE,CH)
3-087-937-41 MANUAL (PC), INSTRUCTION (KOREAN)(PC350:KR,JE)

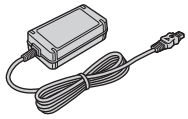
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

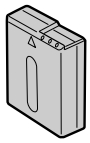
• J MODEL

付属品

電源コード (1)
⚠1-790-732-12

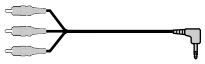


AC アダプター (1)
(AC-L25A)
⚠1-477-534-11

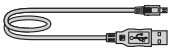


リチャージャブル
バッテリーパック
(NP-FF51) (シルバー) (1)
A-7097-019-A
リチャージャブル
バッテリーパック
(NP-FF51) (ブラック) (1)
(供給せず)

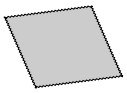
ワイヤレスリモコン (1)
(RMT-831)
1-477-898-51



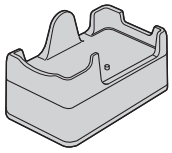
AV接続ケーブル (1)
1-824-097-11



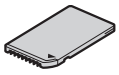
USBケーブル (1)
1-824-382-21



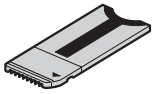
クリーニングクロス (1)
3-073-861-01



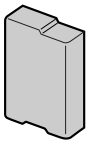
ハンディカムステーション
(DCRA-C111) (1)
1-818-213-11



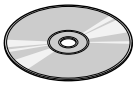
“メモリースティック デュオ” (1)
(16MB)
(供給せず)



メモリースティック デュオ
アダプター (1)
(供給せず)



バッテリー端子カバー (1)
3-070-945-01 (ブラック)
3-070-945-11 (シルバー)



CD-ROM
「SPVD-012 (V) USBドライバ」(1)
3-086-790-01

レンズキャップ (1)
X-2022-808-1(ブラック)
X-2023-385-1(シルバー)

図面
番号　　部品コード　部　品　名

2-050-779-01　取扱説明書
3-087-937-01　取扱説明書 (PC)

⚠印の部品，または⚠印付の点線で囲まれた部品は，
安全性を維持するために，重要な部品です。
従って交換時は，必ず指定の部品を使用してください。

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description			
	A-1070-194-A	CR-048 BOARD, COMPLETE			
		**********			
		(CN8501 is included in this COMPLETE board.)			
		< CAPACITOR >			
C8500	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8502	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8503	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8505	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN8500	1-816-873-11	CONNECTOR BOARD TO BOARD 60P			
CN8501	Not supplied	CONNECTOR, MULTIPLE (SOCKET)			
		(CN8501 is included in this COMPLETE board of CR-048.)			
		< DIODE >			
D8500	8-719-056-61	DIODE MAZS082008SO			
D8501	8-719-158-49	DIODE RD12SB2			
D8502	8-719-158-49	DIODE RD12SB2			
D8503	8-719-158-49	DIODE RD12SB2			
D8504	8-719-158-49	DIODE RD12SB2			
D8508	8-719-078-02	DIODE 1SS357 (T3SONY1)			
		< FERRITE BEAD >			
FB8501	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB8502	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB8503	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB8504	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
		< JACK >			
J8500	1-694-688-11	TERMINAL, S (S VIDEO)			
		< LINE FILTER >			
LF8500	1-456-681-21	COIL, CHOKE			
		< RESISTOR >			
R8504	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8506	1-216-864-11	SHORT CHIP	0		
R8507	1-216-864-11	SHORT CHIP	0		
R8512	1-218-965-11	RES-CHIP	10K	5%	1/16W
		< TERMINAL >			
BT8500	1-694-950-11	TERMINAL BOARD, BATTERY			
		< VARISTOR >			
VD8501	1-801-862-11	VARISTOR, CHIP	(1608)		
VD8507	1-801-862-11	VARISTOR, CHIP	(1608)		
VD8509	1-801-862-11	VARISTOR, CHIP	(1608)		
VD8510	1-801-862-11	VARISTOR, CHIP	(1608)		

Ref. No.	Part No.	Description			
	A-1070-200-A	FP-994 FLEXIBLE BOARD, COMPLETE			
		**********			
		< SWITCH >			
S9400	1-786-179-31	SWITCH, PUSH (1KEY) (PANEL REVERSE)			
	A-1070-201-A	FP-995 FLEXIBLE BOARD, COMPLETE			
		**********			
		< DIODE >			
D953	8-719-056-85	DIODE UDZ-TE-17-8.2B			
D954	8-719-056-85	DIODE UDZ-TE-17-8.2B			
		< JACK >			
J950	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO)			
J951	1-793-995-11	JACK, SUPER SMALL TYPE (LANC)			
		< RESISTOR >			
R901	1-216-864-11	SHORT CHIP	0		
	A-1070-202-A	FP-996 FLEXIBLE BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C9600	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C9601	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
		< DIODE >			
D9600	8-719-079-78	DIODE DCZ2805			
D9601	8-719-079-78	DIODE DCZ2805			
D9602	8-719-073-01	DIODE MA111-(K8).S0			
D9603	8-719-422-64	DIODE MA8062-M			
D9604	8-719-064-07	DIODE SML-310LTT86			
		< IC >			
IC9600	8-742-221-00	HYB IC SBX3055-01			
		< TRANSISTOR >			
Q9600	8-729-049-92	TRANSISTOR	2SC5585H-T2L		
Q9601	8-729-037-72	TRANSISTOR	UN9211J-(TX).SO		
		< RESISTOR >			
R9600	1-216-019-00	RES-CHIP	56	5%	1/10W
R9601	1-216-019-00	RES-CHIP	56	5%	1/10W
R9602	1-216-807-11	METAL CHIP	68	5%	1/10W
R9603	1-216-821-11	METAL CHIP	1K	5%	1/10W
R9604	1-216-805-11	METAL CHIP	47	5%	1/10W
R9605	1-216-819-11	METAL CHIP	680	5%	1/10W
R9606	1-216-295-91	SHORT CHIP	0		

Ref. No.	Part No.	Description			
	A-1070-197-A	MS-234 BOARD, COMPLETE			
		**********			
		< BATTERY >			
⚠BT800	1-756-128-11	BATTERY, LITHIUM (SECONDARY)			
		< CAPACITOR >			
C802	1-127-988-81	CERAMIC CHIP	15000PF	10%	16V
C803	1-127-988-81	CERAMIC CHIP	15000PF	10%	16V
C804	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C805	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C806	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C807	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C808	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C809	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C810	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C811	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C812	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C814	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C815	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C817	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C818	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C819	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C821	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C823	1-164-227-11	CERAMIC CIP	0.022uF	10%	25V
C824	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C826	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C827	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C830	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C832	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C833	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C835	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C837	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C838	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C839	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C840	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C842	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C843	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN800	1-818-683-21	CONNECTOR, FPC (ZIF) 33P			
CN801	1-817-913-11	MEMORY STICK DUO CONNECTOR (MEMORY STICK DUO CONNECTOR)			
		< DIODE >			
D800	6-500-506-01	DIODE TLRMV1021 (T15SOY, F)			
		< FERRITE BEAD >			
FB800	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)			
FB801	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)			
FB802	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)			
FB803	1-469-581-21	INDUCTOR, FERRITE BEAD (1005)			

Ref. No.	Part No.	Description			
		< IC >			
IC800	8-759-638-50	IC AN2901FHQEBV			
IC801	6-705-686-01	IC TK11129CSCL-G			
		< JACK >			
J800	1-784-943-71	JACK (SMALL TYPE) (MIC)			
		< COIL >			
L800	1-469-528-91	INDUCTOR	100uH		
		< RESISTOR >			
R800	1-218-968-11	RES-CHIP	18K	5%	1/16W
R801	1-218-971-11	RES-CHIP	33K	5%	1/16W
R802	1-218-965-11	RES-CHIP	10K	5%	1/16W
R803	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R804	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R805	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R808	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R809	1-218-953-11	RES-CHIP	1K	5%	1/16W
R810	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R811	1-218-953-11	RES-CHIP	1K	5%	1/16W
R812	1-218-953-11	RES-CHIP	1K	5%	1/16W
R816	1-218-969-11	RES-CHIP	22K	5%	1/16W
R818	1-218-969-11	RES-CHIP	22K	5%	1/16W
R820	1-218-990-11	SHORT CHIP	0		
R821	1-218-990-11	SHORT CHIP	0		
R823	1-218-966-11	RES-CHIP	12K	5%	1/16W
R824	1-218-966-11	RES-CHIP	12K	5%	1/16W
R825	1-218-971-11	RES-CHIP	33K	5%	1/16W
R826	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R827	1-218-968-11	RES-CHIP	18K	5%	1/16W
R828	1-218-971-11	RES-CHIP	33K	5%	1/16W
R830	1-208-912-11	METAL CHIP	11K	0.5%	1/16W
R831	1-208-701-11	METAL CHIP	5.6K	0.5%	1/16W
R833	1-208-912-11	METAL CHIP	11K	0.5%	1/16W
R834	1-218-953-11	RES-CHIP	1K	5%	1/16W
R835	1-218-956-11	RES-CHIP	1.8K	5%	1/16W
		< SWITCH >			
S800	1-771-138-82	SWITCH, KEY BOARD (RESET)			
		< VARISTOR >			
VDR804	1-801-862-11	VARISTOR, CHIP	(1608)		
VDR805	1-801-925-21	VARISTOR, CHIP	(1608)		
VDR806	1-801-925-21	VARISTOR, CHIP	(1608)		

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

注　意
電池の交換は，正しく行わないと破裂する可能性があります。電池を交換する場合には必ず同じ型名の電池又は同等品と交換してください。

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

⚠印の部品，または⚠印付の点線で囲まれた部品は，安全性を維持するために，重要な部品です。
従って交換時は，必ず指定の部品を使用してください。

Ref. No.	Part No.	Description			
	A-1070-199-A	PD-225 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C602	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C604	1-131-862-91	TANTAL. CHIP	47uF	20%	4V
C605	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C607	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C611	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C612	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C613	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C615	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C616	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C617	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C618	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C619	1-125-889-91	CERAMIC CHIP	2.2uF	10%	10V
C622	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C624	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C625	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C626	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C627	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C630	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C631	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C632	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
		< CONNECTOR >			
CN601	1-793-224-11	CONNECTOR, FFC/FPC (ZIF) 22P			
CN602	1-573-915-11	CONNECTOR, FFC/FPC (ZIF) 6P			
CN603	1-573-346-21	CONNECTOR, FFC/FPC 6P			
CN605	1-573-364-11	CONNECTOR, FFC/FPC 24P			
CN606	1-794-322-11	CONNECTOR, FFC/FPC (ZIF) 6P			
		< DIODE >			
D602	8-719-073-01	DIODE MA111-(K8).S0			
D604	8-719-074-67	DIODE EDZ-TE61-5.6B			
		< FERRITE BEAD >			
FB601	1-414-760-21	FERRITE, EMI (SMD) (1608)			
		< IC >			
IC601	8-739-093-13	IC NJM12904V (TE2)			
IC602	8-752-109-72	IC CXM3006R			
		< COIL >			
L601	1-400-588-11	INDUCTOR, LAMINATE CHIP	10uH		
L602	1-400-588-11	INDUCTOR, LAMINATE CHIP	10uH		
L603	1-400-588-11	INDUCTOR, LAMINATE CHIP	10uH		
		< TRANSISTOR >			
Q601	8-729-427-42	TRANSISTOR	XP4211		
Q602	8-729-427-12	TRANSISTOR	XP4111		
Q603	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R		
Q604	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R		
Q605	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R		
Q606	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q607	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q608	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q609	6-550-232-01	TRANSISTOR	2SA2029T2LQ/R		
Q610	6-550-232-01	TRANSISTOR	2SA2029T2LQ/R		
		< RESISTOR >			
R601	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R602	1-216-864-11	SHORT CHIP	0		
R603	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R604	1-216-864-11	SHORT CHIP	0		
R605	1-216-864-11	SHORT CHIP	0		
R606	1-216-864-11	SHORT CHIP	0		
R608	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R609	1-218-989-11	RES-CHIP	1M	5%	1/16W
R610	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R611	1-218-975-11	RES-CHIP	68K	5%	1/16W
R613	1-218-977-11	RES-CHIP	100K	5%	1/16W
R615	1-218-949-11	RES-CHIP	470	5%	1/16W
R616	1-220-206-11	RES-CHIP	91K	5%	1/16W
R618	1-218-973-11	RES-CHIP	47K	5%	1/16W
R619	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R620	1-218-973-11	RES-CHIP	47K	5%	1/16W
R621	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R622	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R623	1-218-953-11	RES-CHIP	1K	5%	1/16W
R625	1-208-647-11	METAL CHIP	33	0.5%	1/16W
R626	1-218-965-11	RES-CHIP	10K	5%	1/16W
R629	1-208-647-11	METAL CHIP	33	0.5%	1/16W
R631	1-218-953-11	RES-CHIP	1K	5%	1/16W
R632	1-218-973-11	RES-CHIP	47K	5%	1/16W
R633	1-218-978-11	RES-CHIP	120K	5%	1/16W
R634	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R635	1-218-989-11	RES-CHIP	1M	5%	1/16W
R637	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB601	1-234-369-21	RES, NETWORK 10X4 (1005)			
	A-1070-195-A	SE-151 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C2500	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2501	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C2502	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C2503	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2506	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2508	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C2510	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C2511	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C2512	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C2513	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C2514	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C2515	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C2516	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C2517	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C2518	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description			
C2519	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2520	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C2521	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
		< CONNECTOR >			
CN2500	1-816-644-31	FFC/CONNECTOR, FPC (LIF) 12P			
CN2501	1-815-098-11	CONNECTOR, FPC (ZIF) 21P			
CN2502	1-818-043-21	CONNECTOR, FFC/FPC 10P			
CN2503	1-816-873-11	CONNECTOR BOARD TO BOARD 60P			
CN2504	1-794-376-21	PIN, CONNECTOR 4P			
		< DIODE >			
D2500	8-719-074-67	DIODE EDZ-TE61-5.6B			
D2501	6-500-875-01	DIODE E1S35-AW0C7-01-A3			
D2502	6-500-289-01	DIODE MAZW082H0LS0			
D2503	6-500-289-01	DIODE MAZW082H0LS0			
D2504	6-500-776-01	DIODE MAZW068H0LS0			
		< FERRITE BEAD >			
FB2501	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB2502	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB2503	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB2504	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB2505	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
		< IC >			
IC2500	8-759-489-19	IC uPC6756GR-8JG-E2			
		< COIL >			
L2500	1-469-570-11	INDUCTOR	10uH		
		< RESISTOR >			
R2502	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2503	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2508	1-216-864-11	SHORT CHIP	0		
R2509	1-216-864-11	SHORT CHIP	0		
R2510	1-216-295-91	SHORT CHIP	0		
R2512	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2513	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2514	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2515	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2516	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2517	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2518	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2519	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2520	1-218-990-11	SHORT CHIP	0		
R2521	1-218-990-11	SHORT CHIP	0		
R2522	1-218-990-11	SHORT CHIP	0		
R2523	1-218-990-11	SHORT CHIP	0		
R2524	1-218-990-11	SHORT CHIP	0		
R2525	1-218-990-11	SHORT CHIP	0		
R2530	1-218-990-11	SHORT CHIP	0		
R2531	1-218-990-11	SHORT CHIP	0		
		< SENSOR >			
SE2500	1-476-807-31	SENSOR, ANGULAR VELOCITY (YAW)			
SE2501	1-476-807-41	SENSOR, ANGULAR VELOCITY (PITCH)			

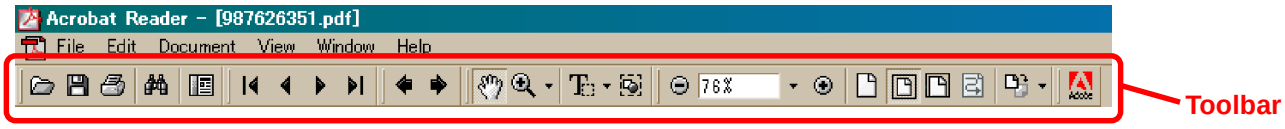
Ref. No.	Part No.	Description			
	A-1070-198-A	ST-108 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C500	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C501	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C502	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C504	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C505	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
		< CONNECTOR >			
CN500	1-816-595-31	CONNECTOR, FPC (ZIF) 23P			
CN501	1-815-333-11	CONNECTOR, FPC (ZIF) 33P			
CN502	1-817-548-11	CONNECTOR, FPC 6P			
		< DIODE >			
D500	8-719-073-01	DIODE MA111-(K8).S0			
D9605	6-500-289-01	DIODE MAZW082H0LS0			
		< IC >			
IC500	6-703-635-01	IC TND721MH5-S-TL-E			
		< TRANSISTOR >			
Q500	8-729-048-75	TRANSISTOR	CPH3109-TL-E		
Q501	8-729-426-24	TRANSISTOR	XP1211-TXE		
Q502	8-729-053-74	TRANSISTOR	CY25AAJ-8-T13-F00R		
		< RESISTOR >			
R501	1-216-805-11	METAL CHIP	47	5%	1/10W
R502	1-216-837-11	METAL CHIP	22K	5%	1/10W
R503	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R504	1-216-816-11	METAL CHIP	390	5%	1/10W
R505	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R506	1-216-805-11	METAL CHIP	47	5%	1/10W
R507	1-216-857-11	METAL CHIP	1M	5%	1/10W
R508	1-218-953-11	RES-CHIP	1K	5%	1/16W
	A-1070-196-A	VP-060 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN8600	1-816-924-11	CONNECTOR BOARD TO BOARD 40P			
CN8601	1-816-650-31	FFC/CONNECTOR, FPC (LIF) 24P			
CN8602	1-816-654-31	FFC/CONNECTOR, FPC (LIF) 6P			
		< DIODE >			
D8601	8-719-422-64	DIODE MA8062-M			
D8602	8-719-422-64	DIODE MA8062-M			
D8603	8-719-422-64	DIODE MA8062-M			
D8604	8-719-422-64	DIODE MA8062-M			
		< FERRITE BEAD >			
FB8601	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB8602	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			
FB8603	1-400-619-11	BEAD, FERRITE (CHIP) (1608)			

Ref. No.	Part No.	Description			
		< RESISTOR >			
R8600	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R8601	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
		< SWITCH >			
S8601	1-771-138-82	SWITCH, KEY BOARD (DISPLAY/BATTERY INFO)			
S8602	1-771-138-82	SWITCH, KEY BOARD (LCD BACK LIGHT)			
		CD-537 BOARD, COMPLETE			
		**********			
		VC-370 BOARD, COMPLETE			
		**********			

Electrical parts list of the CD-537 board and VC-370 board are not shown.
Pages from 5-20 to 5-28 are not shown.

ENGLISH JAPANESE

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

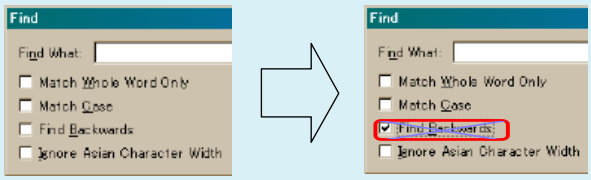
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

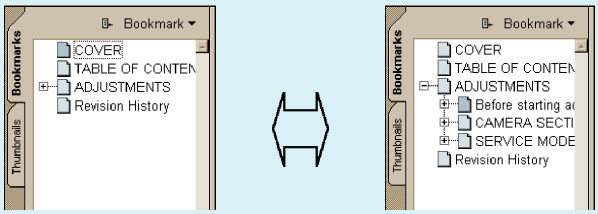
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

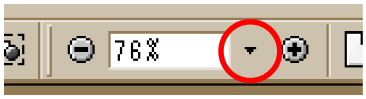
Moving with bookmark:
Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



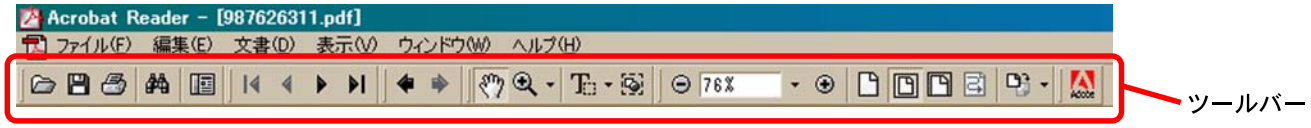
"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

ENGLISH JAPANESE

【Adobe Acrobat Reader Ver 5.0(for Windows)ツールバー内にある主なボタンの機能説明】



文章を印刷する

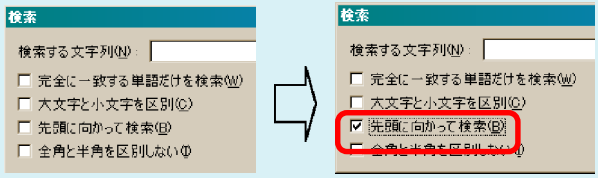
1. 印刷ボタンをクリックする。
2. プリンター、印刷範囲、印刷部数、および他のオプションを指定して「OK」をクリックする。

印刷の応用：
ページ内で印刷したい範囲を設定するには、グラフィック選択ツールを選択し、ページ上をドラッグして印刷したい範囲を囲んでから印刷ボタンをクリックする。

文章内を検索する

1. 検索ボタンをクリックする。
2. 検索したい文字列をテキストボックスに入力して「検索」をクリックする。(必要に応じて検索オプションを指定する)

サービスマニュアルへの応用：
現在のページから前ページに向かって検索する場合は「先頭に向かって検索」のチェックボックスを選択してから「検索」をクリックする。



3. 検索ダイアログボックスをもう一度開き、「次を検索」をクリックすると次に出てくる一致文字列を検索することができる。(前回入力した文字列が、テキストボックスにそのまま表示されている)

サービスマニュアルへの応用：
文章内にある図面ページ(ブロックダイヤグラム、回路図、プリント図)および部品表ページなどは、この検索機能を使って部品検索することができる。例えば、ブロックダイヤグラム上でICのRef. No.を検索し、「次を検索」を続けることによって回路図、プリント図上にあるICのRef. No.へ次々と移動する。
注意：発行年月日によって検索できない場合もあります。

ページを切り換える

- 最初のページに移動する場合、をクリックする。
- 最後のページに移動する場合、をクリックする。
- 前のページに移動する場合、をクリックする。
- 次のページに移動する場合、をクリックする。

一度表示した画面へ逆戻りする

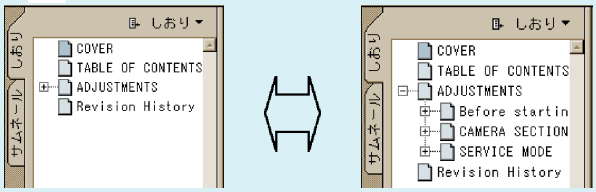
- 前の画面(操作)へ1つずつ逆戻りする場合、をクリックする。
- 戻した画面(操作)を1つずつ前に進める場合、をクリックする。

サービスマニュアルへの応用：
回路図とプリント図を行き来できるので電圧チェックに便利です。

リンクを使用して移動する

1. 手のひらツール、ズームツール、テキスト選択ツール、グラフィック選択ツールのいずれかを選択する。
2. 文章内のリンクのある場所(表紙および章目次ページのボタン、外し方のフローページ、図面ページでは文字が青色になっているところなど)にポインタを置くと、ポインタが人差し指の形「」に変わる。
3. そのままリンクをクリックする。(リンク先へ移動する)

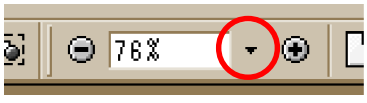
しおりを利用して移動する：
しおりパレット上の項目(テキスト)をクリックするとリンク先へ移動することができる。また、「」をクリックすると隠れている項目を表示することができる。
(「」をクリックすると元に戻る)



画面の表示を拡大、縮小または回転させる

「拡大/ 縮小」

- 倍率ボックスの三角矢印ボタンをクリックし、表示倍率を選択する。または、をクリックしても使えます。



「回転」

- 回転ツールをクリックすると、ページが90度ずつ回転する。

サービスマニュアルへの応用：
見ているプリント図をセットと同じ向きに変えられます。

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.07	Official Release	—	—

DCR-PC350/PC350E

RMT-831

Ver 1.0 2004. 07
Revision History

How to use
Acrobat Reader

SECTION 6
ADJUSTMENTS

ADJ

Link

- Before starting adjustment
  - Adjusting items when replacing main parts and boards
- CAMERA SECTION ADJUSTMENT
  - PREPARATIONS BEFORE ADJUSTMENT
  - INITIALIZATION OF 8,A,B,C,D,E,F,14,18,19,1A,1B,1C,1E,1F PAGE DATA
  - CAMERA SYSTEM ADJUSTMENTS
  - COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT
  - LCD SYSTEM ADJUSTMENT
- MECHANISM SECTION ADJUSTMENT
  - HOW TO ENTER RECORD MODE WITHOUT CASSETTE
  - HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE
  - TAPE PATH ADJUSTMENT
- VIDEO SECTION ADJUSTMENT
  - PREPARATIONS BEFORE ADJUSTMENTS
  - SYSTEM CONTROL SYSTEM ADJUSTMENT
  - SERVO AND RF SYSTEM ADJUSTMENT
  - VIDEO SYSTEM ADJUSTMENTS
  - AUDIO SYSTEM ADJUSTMENTS
- SERVICE MODE
  - ADJUSTMENT REMOTE COMMANDER
  - DATA PROCESS
  - SERVICE MODE

Contents of LEVEL 2 and LEVEL 3 Service Manual

CONTENTS	LEVEL 2	LEVEL 3
1. SERVICE NOTE	○	×
2. DISASSEMBLY	○	×
3. BLOCK DIAGRAMS	OVERALL POWER	×
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	CR-048, SE-151, VP-060, MS-234, ST-108, PD-225, BOARD FP-467, FP-228, FP-826, FP-991, FP-992, FP-993, FP-994, FP-995, FP-996 FLEXIBLE CONTROL SWITCH BLOCK (SB7450, FK7450, PS7450), FLASH UNIT (FL7450)	CD-537, VC-370 BOARD
5. REPAIR PARTS LIST	EXPLODED VIEWS	×
	ELECTRICAL PARTS	○ (CD-537, VC-370 BOARD)

SONY

DCR-PC350/PC350E
9-876-753-51

Sony EMCS Co.

2004G1600-1

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Published by DI Technical Support Section

TABLE OF CONTENTS

6. ADJUSTMENT

1. Before starting adjustment ····· 6-1
1-1. Adjusting items when replacing main parts and boards. ··· 6-2
6-1. CAMERA SECTION ADJUSTMENT ····· 6-4
1-1. PREPARATIONS BEFORE ADJUSTMENT ····· 6-4
1-1-1. List of Service Tools ····· 6-4
1-1-2. Preparations ····· 6-5
1-1-3. Precaution ····· 6-7
1. Setting the Switch ····· 6-7
2. Order of Adjustments ····· 6-7
3. Subjects ····· 6-7
4. Preparing the Flash Adjustment Box ····· 6-8
1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F PAGE DATA ····· 6-9
1-2-1. INITIALIZATION OF A, B, D, 1A, 1B PAGE DATA ···· 6-9
1. Initializing the A, B, D, 1A, 1B Page Data ····· 6-9
2. Modification of A, B, D, 1A, 1B Page Data ····· 6-9
3. A Page Table ····· 6-10
4. B Page Table ····· 6-10
5. D Page Table ····· 6-10
6. 1A Page Table ····· 6-10
7. 1B Page Table ····· 6-10
1-2-2. INITIALIZATION OF 8, C, 18, 1C PAGE DATA ····· 6-11
1. Initializing the 8, C, 18, 1C Page Data ····· 6-11
2. Modification of 8, C, 18, 1C Page Data ····· 6-11
3. 8 Page Table ····· 6-11
4. C Page Table ····· 6-12
5. 18 Page Table ····· 6-13
6. 1C Page Table ····· 6-14
1-2-3. INITIALIZATION OF E, F, 14, 19, 1E, 1F PAGE DATA ··6-15
1. Initializing the E, F, 14, 19, 1E, 1F Page Data ····· 6-15
2. Modification of E, F, 14, 19, 1E, 1F Page Data ····· 6-15
3. E Page Table ····· 6-15
4. F Page Table ····· 6-16
5. 14 Page Table ····· 6-17
6. 19 Page Table ····· 6-18
7. 1E Page Table ····· 6-19
8. 1F Page Table ····· 6-20
1-3. CAMERA SYSTEM ADJUSTMENTS ····· 6-21
1. 54MHz/67.5MHz Origin Oscillation Adjustment (CD-537 board) ····· 6-21
2. HALL Adjustment ····· 6-22
3. MR Adjustment ····· 6-23
4. CCD Output 2ch Matching Adjustment (1) ····· 6-24
5. CCD Output 2ch Matching Adjustment (2) ····· 6-24
6. Flange Back Adjustment (Using Minipattern Box or Flange Back Adjustment Jig) ····· 6-25
7. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away) ····· 6-26
7-1. Flange Back Adjustment (1) ····· 6-26
7-2. Flange Back Adjustment (2) ····· 6-26
8. Flange Back Check ····· 6-27
8-1. Flange Back Check (Using Flange Back Adjustment Jig) ····· 6-27
8-2. Flange Back Check (Using Siemens Star) ····· 6-27
9. Picture Frame Setting (Color Reproduction Adjustment Frame) ····· 6-28
10. Mixed Color Compensation Adjustment ····· 6-29
11. ND ON/OFF Adjustment ····· 6-30
12. Picture Frame Setting (All White Frame) ····· 6-30
13. Auto White Balance Standard Data Input ····· 6-31
14. LV Standard Data Input ····· 6-32
15. Auto White Balance Adjustment ····· 6-32
16. Color Reproduction Adjustment ····· 6-33
17. Color Reproduction Check ····· 6-34
18. White Balance Check ····· 6-35
19. Outdoor White Balance Check Using Vectorscope ····· 6-36
20. MAX GAIN Adjustment ····· 6-36
21. Mechanical Shutter Adjustment ····· 6-37
22. Steady Shot Check ····· 6-37
23. Strobe Light Level Adjustment ····· 6-38
24. Strobe White Balance Adjustment & Check ····· 6-39
1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT ····· 6-40
1. EVF Automatic Adjustment (VC-370 board) ····· 6-40
2. White Balance Adjustment (VC-370 board) ····· 6-41
1-5. LCD SYSTEM ADJUSTMENT ····· 6-42
1. LCD Automatic Adjustment (PD-225 board) ····· 6-42
2. VCOM Adjustment (PD-225 board) ····· 6-43
3. Transmissive Mode White Balance Adjustment (PD-225 board) ····· 6-43
4. Reflective Mode White Balance Adjustment (PD-225 board) ····· 6-44
6-2. MECHANISM SECTION ADJUSTMENT ····· 6-45
2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE ····· 6-45
2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE ····· 6-45
2-3. TAPE PATH ADJUSTMENT ····· 6-45
1. Preparation for Adjustment ····· 6-45
2. Processing after Completing Operations: ····· 6-45
6-3. VIDEO SECTION ADJUSTMENT ····· 6-46
3-1. PREPARATIONS BEFORE ADJUSTMENTS ····· 6-46
3-1-1. Equipment to Required ····· 6-46
3-1-2. Precautions on Adjusting ····· 6-47
3-1-3. Adjusting Connectors ····· 6-48
3-1-4. Connecting the Equipment ····· 6-48
3-1-5. Alignment Tapes ····· 6-49
3-1-6. Input/Output Level and Impedance ····· 6-49
3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT ····· 6-50
1. Initialization of 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F Page Data ····· 6-50
2. Touch Panel Adjustment ····· 6-50
3. Serial No. Input ····· 6-51
3-1. Company ID Input ····· 6-51
3-2. Serial No. Input ····· 6-51
3-3. SERVO AND RF SYSTEM ADJUSTMENT ····· 6-53
1. Cap FG Duty Adjustment (VC-370 Board) ····· 6-53
2. Switching Position Adjustment (VC-370 Board) ····· 6-53
3. Error Rate Check ····· 6-54
3-4. Preparations before adjustments ····· 6-54
3-2. Error Rate Check ····· 6-54
3-3. Processing after Completing Adjustments ····· 6-54
3-4. VIDEO SYSTEM ADJUSTMENTS ····· 6-55
1. S VIDEO OUT Y Level Adjustment (VC-370 Board) ·· 6-55
2. S VIDEO OUT Chroma Level Adjustment (VC-370 Board) ····· 6-55
3. VIDEO OUT Y, Chroma Level Check (VC-370 Board) ··6-56
3-5. AUDIO SYSTEM ADJUSTMENTS ····· 6-57
1. Playback Level Check ····· 6-58
2. Overall Level Characteristics Check ····· 6-58
3. Overall Distortion Check ····· 6-58
4. Overall Noise Level Check ····· 6-58
5. Overall Separation Check ····· 6-58
6-4. SERVICE MODE ····· 6-59
4-1. ADJUSTMENT REMOTE COMMANDER ····· 6-59
1. Using the adjustment remote commander ····· 6-59
2. Precautions upon using the adjustment remote commander ····· 6-59
4-2. DATA PROCESS ····· 6-60
4-3. SERVICE MODE ····· 6-61
1. Setting the Test Mode ····· 6-61
2. Emergence Memory Address (Camera section) ····· 6-61
3. EMG Code (Emergency Code) ····· 6-61
3. Emergence Memory Address (Mechanism section) ····· 6-61
4. EMG Code (Emergency Code) ····· 6-61

3-2. MSW Code ····· 6-62
4. Bit value discrimination ····· 6-63
5. Switch check (1) ····· 6-63
6. Switch check (2) ····· 6-63
7. Switch check (3) ····· 6-64
8. Switch check (4) ····· 6-64
9. Switch check (5) ····· 6-64
10. LED check ····· 6-65
11. Record of Use check (1) ····· 6-65
12. Record of Use check (2) ····· 6-65
13. Record of Self-diagnosis check ····· 6-66

* Color reproduction frame is shown on page 6-68.

SECTION 6
ADJUSTMENTS

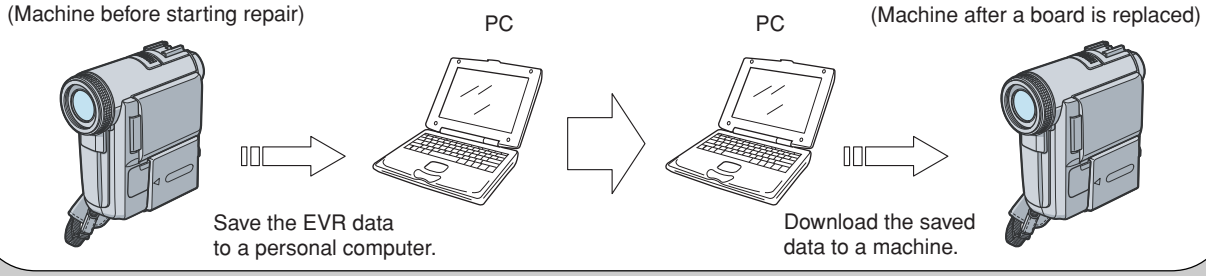
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

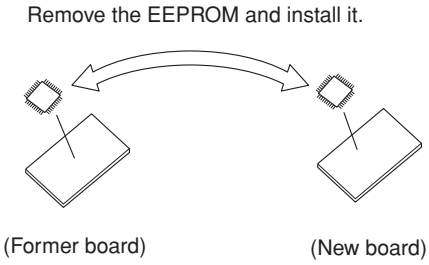
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



Procedure 2

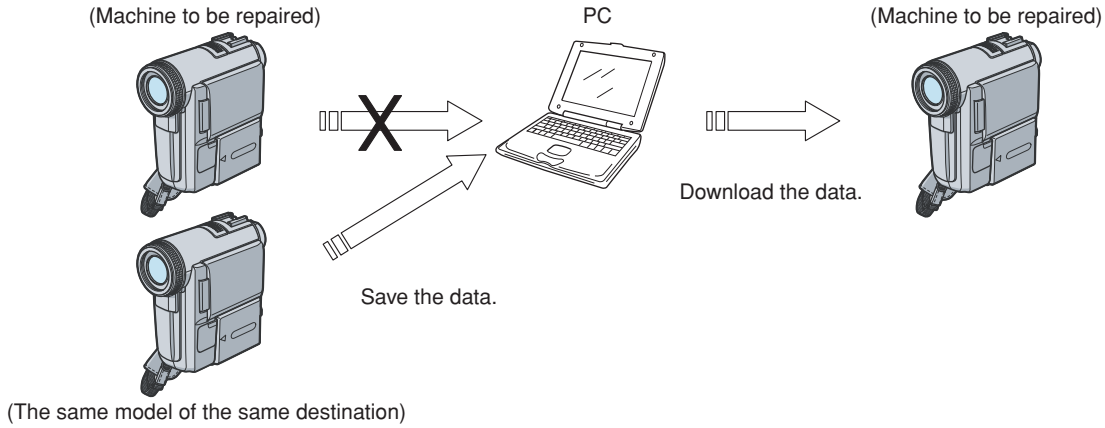
Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Note: IC2802 (Flash memory) on the VC-370 board cannot be replaced.

Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 6-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards.

• Adjusting items when replacing main parts

When replacing main parts, adjust the items indicated by ● in the following table.

Note1: When replacing the drum assy. or the mechanism deck, reset the data of page: 7, address: A7 to A9 to "00". (Refer to "Record of Use check" of "6-4. SERVICE MODE")

Adjustment Section	Adjustment	Replaced parts																				
		Block replacement								Parts replacement												
		Lens device	Mechanism deck (Note1)	LCD block LCD901 (LCD panel, touch panel)	LCD block LED901 (Backlight)	EVF block LCD902 (LCD panel)	Flash unit (FL7450)	Mechanism deck M901 (Drum assy) (Note1)	Mechanism MD block	CD-537 board IC7302 (CCD imager)	CD-537 board IC7303, X7301 (Timing generator)	CD-537 board IC7305 (S/H)	PD-225 board IC602 (RGB driver, Timing generator (LCD))	SE-151 board D2501 (Backlight (EVF))	SE-151 board SE2500/2501 (YAW/PITCH sensor)	VC-370 board IC1501 (,A/D conv.)	VC-370 board IC2101 (Camera DV signal process, etc.)	VC-370 board IC2301 (DV signal process,RF signal process)	VC-370 board IC1801 (REC/PB AMP)	VC-370 board IC1901 (Video IN/OUT)	VC-370 board IC1650 (RGB driver, Timing generator (EVF))
Initialization of 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F page data	Loading of flash memory program																					
	Initialization of A, B, D, 1A,1B page data																					
	Initialization of 8, C, 18, 1C page data																					
	Initialization of E, F, 14, 19, 1E, 1F page data																					
Camera	54MHz/67.5MHz origin oscillation adjustment										●											
	HALL adj.	●																				
	MR adj.	●																				
	CCD Output 2ch Matching adj.									●		●				●						
	Flange back adj.	●								●												
	Mixed color compensation adj.									●		●				●						
	ND ON/OFF adj.	●																				
	AWB standard data input									●		●				●						
	LV standard data input									●		●				●						
	Auto white balance adj.									●		●				●						
	Color reproduction adj.									●		●				●						
	MAX GAIN adj.									●		●				●						
	Mechanical shutter adj.	●																				
	Steady shot check														●							
	Strobe light level adj.						●															
	Strobe white balance adj.						●															
Color EVF	EVF automatic adj.																●					●
	White balance adj.					●								●								●
LCD	LCD automatic adj.												●				●					
	V COM adj.			●									●									
	Transmissive mode white balance adj.			●	●								●									
	Reflective mode white balance adj.			●	●								●									
Mechanism	Tape path adj.		●					●	●													
System control	Touch panel adj.			●																		
	Serial No. input																					
Servo, RF	CAP FG duty adj.		●						●													
	Switching position adj.		●					●	●													
	Error rate check		●					●	●									●	●			
Video	S VIDEO OUT Y level adj.																●			●		
	S VIDEO OUT chroma level adj.																●			●		

Table. 6-1-1(1).

• Adjusting items when replacing a board or EEPROM

When replacing a board or EFPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Board replacement: CD-537 board (COMPLEAT)	Board replacement: PD-225 board (COMPLEAT)	Board replacement: SE-151 board (COMPLEAT)	Board replacement: VC-370 board (COMPLEAT)	EEPROM replacement: VC-370 board IC2602 (EEPROM)	EEPROM replacement: VC-370 board IC2701 (EEPROM)	Supporting RadarW
Initialization of 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F page data	Loading of flash memory program							
	Initialization of A, B, D, 1A,1B page data				●		●	
	Initialization of 8, C, 18, 1C page data				●	●		
	Initialization of E, F, 14, 19, 1E, 1F page data				●	●		
Camera	54MHz/67.5MHz origin oscillation adjustment	●			●	●		
	HALL adj.				●	●		●
	MR adj.				●	●		●
	CCD Output 2ch Matching adj.	●			●	●		●
	Flange back adj.	●			●	●		●
	Mixed color compensation adj.	●			●	●		●
	ND ON/OFF adj.				●	●		●
	AWB standard data input	●			●	●		●
	LV standard data input	●			●	●		●
	Auto white balance adj.	●			●	●		●
	Color reproduction adj.	●			●	●		●
	MAX GAIN adj.	●			●	●		●
	Mechanical shutter adj.				●	●		●
	Steady shot check			●	●	●		●
	Strobe light level adj.				●	●		●
	Strobe white balance adj.				●	●		●
Color EVF	EVF automatic adj.				●	●		●
	White balance adj.			●	●	●		
LCD	LCD automatic adj.		●		●	●		●
	V COM adj.		●		●	●		
	Transmissive mode white balance adj.		●		●	●		
	Reflective mode white balance adj.		●		●	●		●
Mechanism	Tape path adj.							
System control	Touch panel adj.				●		●	
	Serial No. input				●	●		
Servo, RF	CAP FG duty adj.				●	●		●
	Switching position adj.				●	●		●
	Error rate check				●	●		●
Video	S VIDEO OUT Y level adj.				●	●		
	S VIDEO OUT chroma level adj.				●	●		

Table. 6-1-1(2).

Note2: When the repair is finished, confirm the following items.

1. Shoot the all black subject (Attach the lens cap and shoot), and confirm that a vertical line is not displayed in the center of the screen, and that there is no difference in left-right brightness level of the screen.
2. Shoot a subject of low light, and confirm that a vertical line is not displayed in the center of the screen, and that there is no difference in left-right brightness level of the screen.
3. Shoot a subject of normal light, and confirm that a vertical line is not displayed in the center of the screen, and that there is no difference in left-right brightness level of the screen.

When the above symptom occurs, perform the whole process of "CCD Output 2ch Matching Adjustment".

6-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope

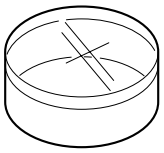
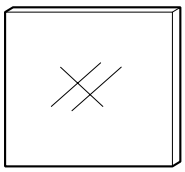
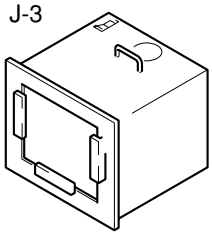
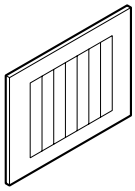
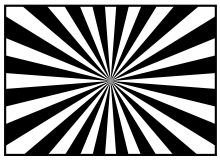
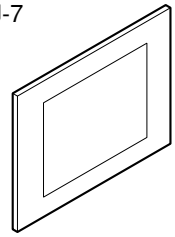
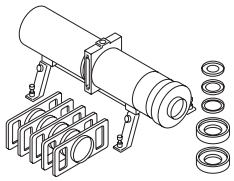
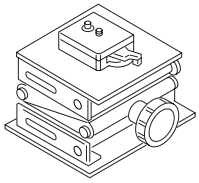
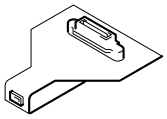
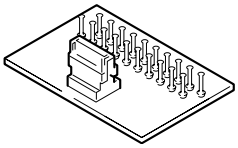
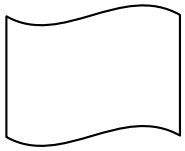
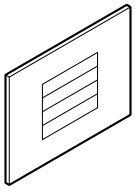
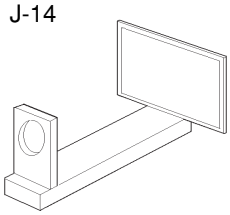
J-1  Filter for color temperature correction (C14) J-6080-058-A	J-2  ND filter 1.0 J-6080-808-A ND filter 0.4 J-6080-806-A ND filter 0.1 J-6080-807-A	J-3  Pattern box PTB-450 J-6082-220-A or Pattern box PTB-1450 J-6082-557-A
J-4  Color chart for pattern box For PTB-450: J-6020-250-A For PTB-1450: J-6082-559-A	J-5 Adjustment remote commander (RM-95 upgraded) J-6082-053-B	J-6  Siemens star chart J-6080-875-A
J-7  Clear chart for pattern box For PTB-450: J-6080-621-A For PTB-1450: J-6082-560-A	J-8  Mini pattern box J-6082-353-B	J-9  Camera table J-6082-384-A
J-10  CPC-6 flexible jig J-6082-370-C	J-11  CPC-6 terminal board jig J-6082-371-A	J-12  Backgorund paper J-2501-130-A
J-13  Mixed color compensation chart For PTB-450: J-6082-558-A For PTB-1450: J-6082-561-A	J-14  Flange back adjustment jig J-6082-563-A	

Fig. 6-1-1.

1-1-2. Preparations

Note1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note2: When performing only the adjustments, the lens block and boards need not be disassembled.

Note3: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1) Connect the equipment for adjustments according to Fig. 6-1-3.

Note4: As removing CN1020 of the VC-370 board means removing the lithium 3V power supply (BT800 on the MS-234 board), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data.
But the self-diagnosis data and the data on history of use (total drum rotation time etc.) will be kept even if the lithium 3V power supply is removed. (Refer to "6-4. Service Mode" for the self-diagnosis data and the data on history of use.)

Note5: Setting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: A, address: 10, set data: 01, and press the PAUSE button.
The above procedure will enable the camera power to be turned on with the control switch block (PS7450) removed. After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note6: Exiting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: A, address: 10, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

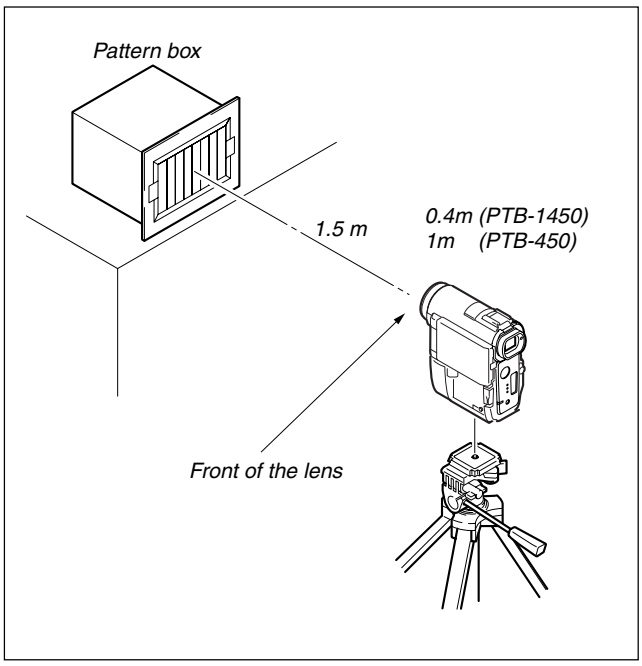


Fig. 6-1-2.

[CONNECTION OF EQUIPMENT]

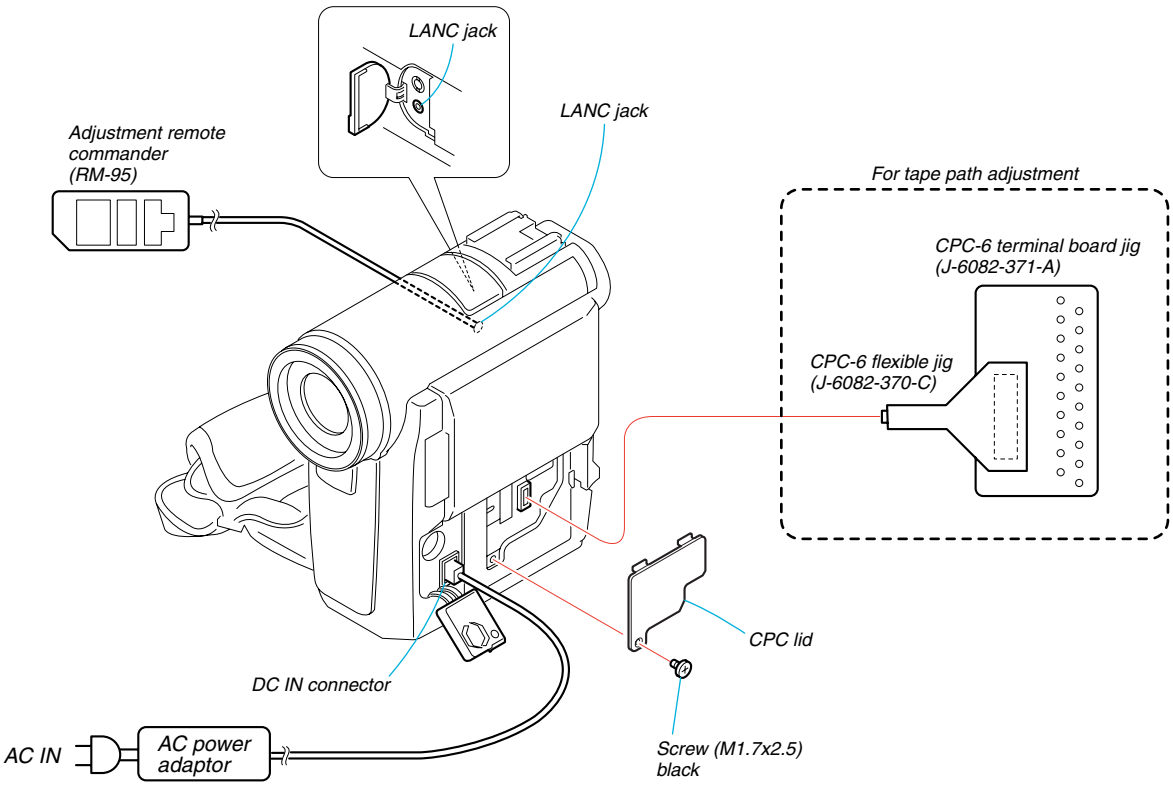


Fig. 6-1-3.

1-1-3. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER switch (PS7450 block) ..... CAMERA
2. NIGHT SHOT switch (FK7450 block) ..... OFF
3. BACK LIGHT switch (FK-7450 board) ..... OFF
4. FOCUS switch (FK7450 block) ..... OFF
5. EASY switch (PS7450 block) ..... OFF
6. Touch panel settings

CAMERA SET menu

PROGRAM AE ..... AUTO
SPOT METER ..... AUTO
EXPOSURE ..... AUTO
WHITE BALANCE ..... AUTO
AE SHIFT 0
COLOR SLOW SHUTTER ..... OFF
ZEBRA ..... OFF
DIGITAL ZOOM ..... OFF
16 : 9 WIDE ..... OFF
STEADY SHOT ..... OFF

PICT. APPLI menu

PICTURE EFFECT ..... OFF
DIGITAL EFFECT ..... OFF
DEMO MODE ..... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

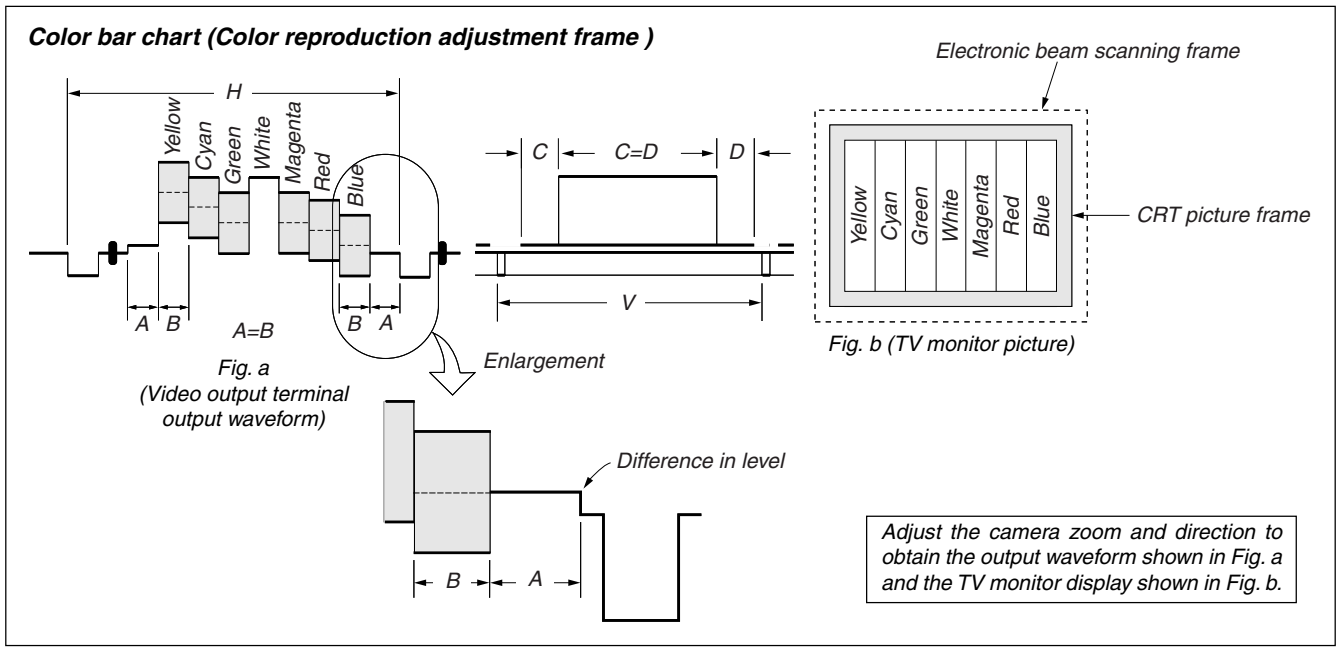


Fig. 6-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 6-1-4. (Color reproduction adjustment frame)
2) Mixed color compensation chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a mixed color compensation chart in its place. (Do not perform zoom operations during this time.)
3) Clear chart (All white frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. And set up data for the all white frame.
4) Flange back adjustment chart
   Make the chart shown in Fig. 6-1-5. using A0 size (1189mm × 841mm) black and white vellum paper.

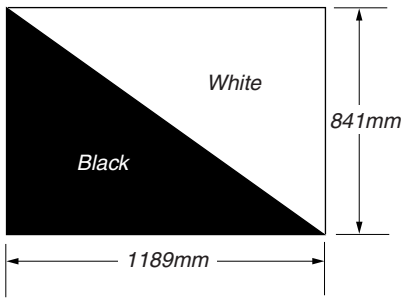


Fig. 6-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate strobe adjustment.
If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

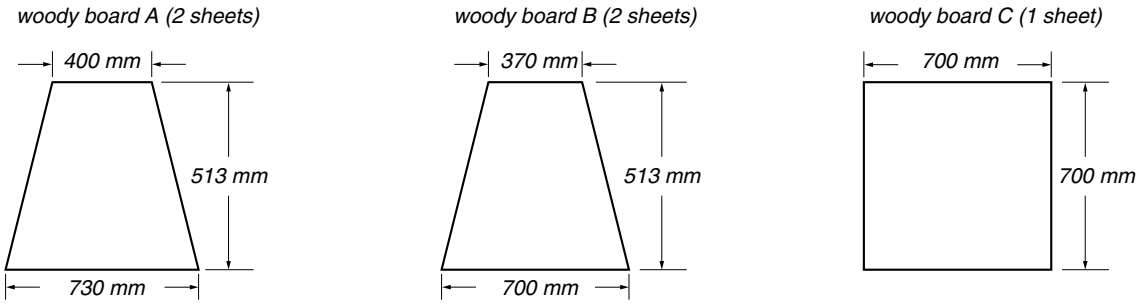


Fig. 6-1-6

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-7)

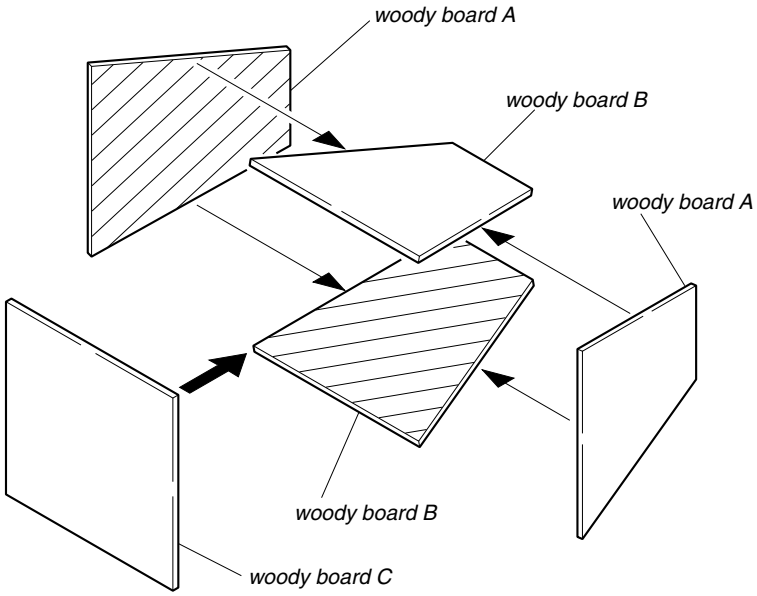


Fig. 6-1-7

1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F PAGE DATA

1-2-1. INITIALIZATION OF A, B, D, 1A, 1B PAGE DATA

Note: When reading or writing the A, B, D page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1A or 1B page data, select page: 0, address: 10, and set data: 01, then select A or B page. The 1A or 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the A, B, D, 1A, 1B Page Data

Note1: If the A, B, D, 1A, 1B page data has been initialized, the following adjustments need to be performed again.
1) Modification of A, B, D, 1A, 1B page data
2) Touch panel adjustment

Adjusting page	A
Adjusting Address	10 to FF
Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	D
Adjusting Address	10 to 70
Adjusting page	1A
Adjusting Address	00 to FF
Adjusting page	1B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	7	04		Set the following data. 90 (DCR-PC350 (NTSC)) 91 (DCR-PC350E (PAL))
4	7	01	XX	Set the data. (Note2)
5	7	00	01	Set the data, and press PAUSE button.
6	7	02		Check that the data changes to "01".
7				Perform "Modification of A, B, D, 1A, 1B Page Data".

Note2: XX=20: Initializing A page
XX=21: Initializing B page
XX=22: Initializing D page
XX=23: Initializing 1A page
XX=24: Initializing 1B page
XX=25: Initializing A and 1A page
XX=26: Initializing B and 1B page
XX=28: Initializing A, B, D, 1A and 1B page

2. Modification of A, B, D, 1A, 1B Page Data

If the A, B, D, 1A, 1B page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the A, B, D page data, select page: 0, address: 10, and set data: 00.
3) When changing the 1A, 1B page data, select page: 0, address: 10, and set data: 01.
   After completing the modification of 1A, 1B page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of A, B, D, 1A, 1B Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

Note: If the following symptoms occur after completing of the "Modification of A, B, D, 1A, 1B page data", check that the data of addresses: 1A to 4F of A page and the data of addresses: 12 to 19 of D page are same as those of the same model of the same destination.
1) The self-diagnosis code "E:20:00" on the LCD screen is displayed.
2) The power is shut off so that unit cannot operate.

3. A Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, B, D, 1A, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data").

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11 to 17			Fixed data-1
18			Fixed data-2
19 to 2E			Fixed data-1
2F			Fixed data-2
30			Fixed data-1
31			Fixed data-2
32 to 8F			Fixed data-1
90	D2	D4	Touch panel adj.
91	1B	15	
92	C7	C4	
93	10	1F	
94 to FF			Fixed data-1

Table. 6-1-2.

4. B Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, B, D, 1A, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data").

Address	Remark
00 to FF	Fixed data-1

Table. 6-1-3.

5. D Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, B, D, 1A, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data").

Address	Remark
00 to 0F	
10 to 13	Fixed data-1
14	Fixed data-2
15	Fixed data-1
16	Fixed data-2
17 to 28	Fixed data-1
29	Fixed data-2
2A	(Modified data. Copy the data
2B	built in the same model.)
2C	
2D	
2E	
2F	
30	
31 to 32	Fixed data-1
33	Fixed data-2
34 to 44	Fixed data-1
45	Fixed data-2
46 to 47	Fixed data-1
48	Fixed data-2
49	
4A	Fixed data-1
4B	Fixed data-2
4C	(Modified data. Copy the data
4D	built in the same model.)
4E	
4F	
50 to 56	Fixed data-1
57	Fixed data-2
58 to 70	Fixed data-1

Table. 6-1-4.

6. 1A Page Table

Note1: When reading or writing the 1A page data, select page: 0, address: 10, and set data: 01, then select A page. The 1A page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, B, D, 1A, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data").

Address	Remark
00 to FF	Fixed data-1

Table. 6-1-5.

7. 1B Page Table

Note1: When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the A, B, D, 1A, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of A, B, D, 1A, 1B Page Data").

Address	Remark
00 to FF	Fixed data-1

Table. 6-1-6.

1-2-2. INITIALIZATION OF 8, C, 18, 1C PAGE DATA

Note: When reading or writing the 8, C page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 18, 1C page data, select page: 0, address: 10, and set data: 01, then select 8 or C page. The 18 or 1C page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the 8, C, 18, 1C Page Data

Note1: If "Initializing the 8, C, 18, 1C Page Data" is performed, all data of the 8 page, C page, 18 page and 1C page will be initialized. (It is impossible to initialize a single page.)

Note2: If the 8, C, 18, 1C page data has been initialized, following adjustments need to be performed again.
1) Modification of 8, C, 18, 1C page data
2) Viewfinder system adjustments
3) LCD system adjustments
4) Serial No. input
5) Servo and RF system adjustments
6) Video system adjustments

Adjusting page	8
Adjusting Address	00 to FF
Adjusting page	C
Adjusting Address	10 to FF
Adjusting page	18
Adjusting Address	00 to FF
Adjusting page	1C
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	3	81		Check that the data is "00".
4	3	80	0C	Set the data, and press PAUSE button.
5	3	80		Check that the data changes to "1C".
6				Perform "Modification of 8, C, 18, 1C Page Data".

2. Modification of 8, C, 18, 1C Page Data

If the 8, C, 18, 1C page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the 8, C page data, select page: 0, address: 10, and set data: 00.
3) When changing the 18, 1C page data, select page: 0, address: 10, and set data: 01.
   After completing the modification of 18, 1C page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
6) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of 8, C, 18, 1C Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. 8 Page Table

Note1: The data of page: 0, address: 10 must be “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C, 18, 1C Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, C, 18, 1C Page Data”).

Address	Remark
00 to 29	Fixed data-1
2A	Fixed data-2
2B to 3F	Fixed data-1
40	Fixed data-2
41 to 43	Fixed data-1
44	Fixed data-2
45 to 79	Fixed data-1
7A	Fixed data-2
7B to 83	Fixed data-1
84	Fixed data-2 (Modified data. Copy the data built in the same model.)
85	
86	
87	
88	
89	
8A to 94	Fixed data-1
95	Fixed data-2
96 to AB	Fixed data-1
AC	Fixed data-2
AD to B1	Fixed data-1
B2	Fixed data-2 (Modified data. Copy the data built in the same model.)
B3	
B4	
B5	Fixed data-1
B6	Fixed data-2
B7	Fixed data-1
B8	Fixed data-2 (Modified data. Copy the data built in the same model.)
B9	
BA	
BB	
BC to BD	Fixed data-1
BE	Fixed data-2
BF	
C0 to C2	Fixed data-1
C3	Fixed data-2 (Modified data. Copy the data built in the same model.)
C4	
C5	
C6	
C7	Fixed data-1
C8	Fixed data-2 (Modified data. Copy the data built in the same model.)
C9	
CA	
CB	
CC	
CD	
CE to D6	Fixed data-1
D7	Fixed data-2
D8 to DF	Fixed data-1
E0	Fixed data-2
E1	Fixed data-1
E2	Fixed data-2 (Modified data. Copy the data built in the same model.)
E3	
E4	
E5	
E6	Fixed data-1
E7	Fixed data-2
E8 to EF	Fixed data-1
F0	Fixed data-2
F1 to F9	Fixed data-1
FA	Fixed data-2
FB	
FC to FF	Fixed data-1

Table. 6-1-6.

4. C Page Table

Note1: The data of page: 0, address: 10 must be “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C, 18, 1C Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, C, 18, 1C Page Data”).

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	EE	EE	Switching position adj.
11	00	00	
12	00	00	
13	00	00	
14 to 15			Fixed data-1
16	E0	E0	CAP FG duty adj.
17 to 24			Fixed data-1
25	5D	5D	S VIDEO out Y level adj.
26	7D	7D	S VIDEO out Cr level adj.
27	59	59	S VIDEO out Cb level adj.
28 to 3B			Fixed data-1
3C			Fixed data-2
3D			(Modified data. Copy the data
3E			built in the same model.)
3F	80	8A	VCO adj. (EVF)
40	8A	80	
41			Fixed data-1
42			Fixed data-2
43			Fixed data-1
44			Fixed data-2
45	8E	8D	White balance adj. (EVF)
46	8C	8F	
47	35	32	Contrast adj. (EVF)
48			Fixed data-2
49 to 4B			Fixed data-1
4C			Fixed data-2
4D			(Modified data. Copy the data
4E			built in the same model.)
4F			
50	78	80	VCO adj. (LCD)
51	82	76	
52	BC	BC	V COM adj. (LCD)
53			Fixed data-2
54			Fixed data-1
55			Fixed data-2
56	73	7B	Transmissive mode white balance
57	6F	70	adj. (LCD)
58	51	52	Contrast adj. (LCD)
59			Fixed data-2
5A			
5B to 5F			Fixed data-1
60			Fixed data-2
61			(Modified data. Copy the data
62			built in the same model.)
63			
64 to 65			Fixed data-1
66			Fixed data-2
67			(Modified data. Copy the data
68			built in the same model.)
69 to 6A			Fixed data-1
6B			Fixed data-2
6C to 74			Fixed data-1
75			Fixed data-2
76 to 78			Fixed data-1
79			Fixed data-2
7A			
7B	8C	97	Reflective mode white balance adj.
7C	86	8C	(LCD)
7D			Fixed data-1
7E			Fixed data-2
7F to A3			Fixed data-1
A4			Fixed data-2
A5 to A6			Fixed data-1
A7			Fixed data-2
A8			(Modified data. Copy the data
A9			built in the same model.)
AA			
AB			
AC			
AD			
AE to AF			Fixed data-1
B0			Fixed data-2
B1			(Modified data. Copy the data
B2			built in the same model.)
B3			
B4			
B5			
B6 to CB			Fixed data-1
CC			Fixed data-2
CD			(Modified data. Copy the data
CE			built in the same model.)
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6 to D7			Fixed data-1
D8			Fixed data-2
D9			(Modified data. Copy the data
DA			built in the same model.)
DB			
DC to DD			Fixed data-1
DE			Fixed data-2
DF			
E0	08	08	Serial No. input
E1	00	00	
E2	46	46	
E3	01	01	
E4	02	02	
E5	00	00	
E6	00	00	
E7	00	00	
E8 to F3			Fixed data-1

Address	Initial value		Remark
	NTSC	PAL	
F4	00	00	Emergency memory address
F5	00	00	(Mechanism section)
F6	00	00	
F7	00	00	
F8	00	00	
F9	00	00	
FA	00	00	
FB	00	00	
FC	00	00	
FD	00	00	
FE	00	00	
FF	00	00	

Table. 6-1-7.

5. 18 Page Table

Note1: When reading or writing the 18 page data, select page: 0, address: 10, and set data: 01, then select 8 page. The 18 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C, 18, 1C Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of 8, C, 18, 1C Page Data").

Address	Remark
00	Fixed data-1
01	Fixed data-2
02 to FF	Fixed data-1

Table. 6-1-8.

6. 1C Page Table

Note1: When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C, 18, 1C Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of 8, C, 18, 1C Page Data").

Address	Initial value		Remark
	NTSC	PAL	
00 to 2E	Fixed data-1		
2F	Fixed data-2		
30 to 77	Fixed data-1		
78	Fixed data-2		
79 to A9	Fixed data-1		
AA	Fixed data-2		
AB to B2	Fixed data-1		
B3	00	00	Error rate check
B4	00	00	
B5	00	00	
B6	00	00	
B7	00	00	
B8	80	80	
B9	00	00	
BA	00	00	
BB	00	00	
BC	00	00	
BD	00	00	
BE	00	00	
BF	00	00	
C0	00	00	
C1	00	00	
C2	00	00	
C3	80	80	
C4	00	00	
C5	00	00	
C6	00	00	
C7	00	00	
C8	00	00	
C9 to FF	Fixed data-1		

Table. 6-1-9.

1-2-3. INITIALIZATION OF E, F, 14, 19, 1E, 1F PAGE DATA

Note: When reading or writing the E, F page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 14, 19, 1E and 1F page data, select page: 0, address: 10, and set data: 01, then select 4, 9, E or F page. The 14, 19, 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the E, F, 14, 19, 1E, 1F Page Data

Note1: If "Initializing the E, F, 14, 19, 1E, 1F Page Data" is performed, all data of the E page, F page, 14 page, 19 page, 1E page and 1F page will be initialized. (It is impossible to initialize a single page.)
Note2: If the E, F, 14, 19, 1E, 1F page data has been initialized, following adjustments need to be performed again.
1) Modification of E, F, 14, 19, 1E, 1F page data
2) Camera system adjustments

Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	14
Adjusting Address	00 to FF
Adjusting page	19
Adjusting Address	00 to FF
Adjusting page	1E
Adjusting Address	00 to FF
Adjusting page	1F
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01		Set the following data, and press PAUSE button. 2D: DCR-PC350 (NTSC) 2F: DCR-PC350E (PAL)
4	6	03	03	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01".
6	6	01	00	Set the data, and press PAUSE button.
7				Perform "Modification of E, F, 14, 19, 1E, 1F Page Data".

2. Modification of E, F, 14, 19, 1E, 1F Page Data

If the E, F, 14, 19, 1E, 1F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the E, F page data, select page: 0, address: 10, and set data: 00.
3) When changing the 14, 19, 1E, 1F page data, select page: 0, address: 10, and set data: 01.
After completing the modification of 14, 19, 1E, 1F page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
6) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F, 14, 19, 1E, 1F Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. E Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 14, 19, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 14, 19, 1E, 1F Page Data").

Address	Remark
00 to 04	Fixed data-1
05	Fixed data-2
06 to 07	Fixed data-1
08	Fixed data-2 (Modified data. Copy the data built in the same model.)
09	
0A	
0B	
0C to 12	Fixed data-1
13	Fixed data-2
14 to 1A	Fixed data-1
1B	Fixed data-2
1C to 1F	Fixed data-1
20	Fixed data-2 (Modified data. Copy the data built in the same model.)
21	
22	
23	
24 to 30	Fixed data-1
31	Fixed data-2
32 to 5B	Fixed data-1
5C	Fixed data-2
5D	
5E to 5F	Fixed data-1
60	Fixed data-2
61	
62 to 65	Fixed data-1
66	Fixed data-2 (Modified data. Copy the data built in the same model.)
67	
68	
69	
6A to 71	Fixed data-1
72	Fixed data-2
73 to FF	Fixed data-1

Table. 6-1-10.

4. F Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 14, 19, 1E, 1F Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 14, 19, 1E, 1F Page Data”).

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	40	40	54MHz/66MHz origin osc. Adj.
11 to 12			Fixed data-1
13	39	39	HALL adj.
14	74	74	
15	88	88	
16	47	47	
17	81	81	
18	88	88	
19	B4	D0	MAX GAIN adj.
1A	00	00	LV standard data input
1B	30	30	
1C to 23			Fixed data-1
24	00	00	CCD Output 2ch Matching adj. (1)
25	00	00	
26	00	00	
27	00	00	
28 to 2D			Fixed data-1
2E	1A	1A	AWB standard data input
2F	00	00	
30	07	07	
31	00	00	
32	11	11	Auto white balance adj.
33	00	00	
34	0A	0A	
35	00	00	
36 to 3D			Fixed data-1
3E	2D	2D	Strobe white balance adj.
3F	64	64	
40 to 43			Fixed data-1
44	2D	2D	Auto white balance adj.
45	20	20	
46	5A	5A	
47	80	80	
48	11	11	Flange back adj.
49	C9	C9	
4A	4A	4A	
4B	0C	0C	
4C	23	23	
4D	AC	AC	
4E	00	00	
4F	00	00	
50	00	00	
51	00	00	
52	B2	B2	
53	19	19	
54	19	19	
55	26	26	
56	00	00	
57	06	06	
58	00	00	MR adj./Flange back adj.
59			Fixed data-1
5A	80	80	MR adj.
5B	80	80	
5C	80	80	
5D	80	80	
5E	40	40	
5F	C0	C0	
60	40	40	
61	C0	C0	
62	40	40	
63	C0	C0	
64	40	40	
65	C0	C0	
66 to 75			Fixed data-1
76	40	40	Mechanical shutter adj.
77	00	00	
78	34	34	
79	00	00	
7A	30	30	
7B	00	00	
7C	2A	2A	
7D	00	00	
7E	20	1E	
7F	00	00	
80	40	40	
81	3A	3A	
82	31	31	
83	31	31	
84	35	35	
85	1E	1E	
86	80	80	
87	80	80	
88	80	80	
89	80	80	
8A	80	80	
8B	80	80	
8C	01	01	Strobe light level adj.
8D	E0	E0	
8E	80	80	
8F	80	80	
90	80	80	
91	20	20	
92	19	19	HALL adj.
93 to 99			Fixed data-1
9A			Fixed data-2
9B			(Modified data. Copy the data
9C			built in the same model.)
9D to 9E			Fixed data-1
9F			Fixed data-2
A0			
A1 to A8			Fixed data-1
A9			Fixed data-2

F page

Address	Initial value		Remark
	NTSC	PAL	
AA to B0			Fixed data-1
B1			Fixed data-2 (Modified data. Copy the data built in the same model.)
B2			
B3			
B4			
B5			
B6			
B7 to D6			Fixed data-1
D7			Fixed data-2
D8 to F7			Fixed data-1
F8			Fixed data-2 (Modified data. Copy the data built in the same model.)
F9			
FA			
FB			
FC to FF			Fixed data-1

Table. 6-1-11.

5. 14 Page Table

Note1: When reading or writing the 14 page data, select page: 0, address: 10, and set data: 01, then select 4 page. The 14 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 14, 19, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 14, 19, 1E, 1F Page Data").

Address	Initial value		Remark
	NTSC	PAL	
00 to 2B			Fixed data-1
2C			Fixed data-2 (Modified data. Copy the data built in the same model.)
2D			
2E			
2F			
30			
31			
32			
33			
34			
35			
36 to 3F			Fixed data-1
40			Fixed data-2
41			
42			Fixed data-1
43			Fixed data-2
44			Fixed data-1
45			Fixed data-2
46			Fixed data-1
47			Fixed data-2
48 to 97			Fixed data-1
98	00	00	Mixed color compensation adj.
99	00	00	
9A	00	00	
9B	00	00	
9C	00	00	
9D	00	00	
9E	00	00	
9F	00	00	
A0	EE	EE	Color reproduction adj.
A1	F5	F5	
A2	45	45	
A3	2F	2F	
A4	FE	FE	
A5	FF	FF	
A6	44	44	
A7	39	39	
A8	00	00	Mixed color compensation adj.
A9	00	00	
AA	00	00	
AB	00	00	
AC	00	00	
AD	00	00	
AE	00	00	
AF	00	00	
B0	00	00	
B1	00	00	
B2	00	00	Mixed color compensation adj.
B3	00	00	
B4	00	00	
B5	00	00	
B6	00	00	
B7	00	00	
B8 to BF			Fixed data-1
C0			Fixed data-2 (Modified data. Copy the data built in the same model.)
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8 to D1			Fixed data-1
D2			Fixed data-2
D3 to D4			Fixed data-1
D5			Fixed data-2
D6			Fixed data-1
D7			Fixed data-2
D8			Fixed data-1
D9			Fixed data-2 (Modified data. Copy the data built in the same model.)
DA			
DB			
DC			
DD			
DE			
DF to E7			Fixed data-1
E8	1A	1A	AWB standard data input
E9	00	00	
EA	07	07	
EB	00	00	
EC	1A	1A	
ED	00	00	
EE	07	07	
EF	00	00	
F0	1A	1A	
F1	00	00	
F2	07	07	
F3	00	00	
F4	11	11	Auto white balance adj.
F5	00	00	
F6	0A	0A	
F7	00	00	
F8	11	11	
F9	00	00	
FA	0A	0A	
FB	00	00	
FC	11	11	
FD	00	00	
FE	0A	0A	
FF	00	00	

Table. 6-1-12.

6. 19 Page Table

Note1: When reading or writing the 19 page data, select page: 0, address: 10, and set data: 01, then select 9 page. The 19 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 14, 19, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 14, 19, 1E, 1F Page Data").

Address	Initial value		Remark
	NTSC	PAL	
00 to 05			Fixed data-1
06			Fixed data-2
07 to 1F			Fixed data-1
20	00	00	CCD Output 2ch Matching adj. (1)
21	00	00	
22	00	00	
23	00	00	
24	28	28	HALL adj.
25	D8	D8	
26	28	28	
27	D8	D8	
28	00	00	ND ON/OFF adj.
29			Fixed data-1
2A	00	00	CCD Output 2ch Matching adj. (1)
2B	00	00	
2C	00	00	
2D	00	00	
2E	00	00	CCD Output 2ch Matching adj. (2)
2F	00	00	
30	00	00	
31	00	00	
32	00	00	
33	00	00	
34	00	00	
35	00	00	
36	00	00	
37	00	00	
38	00	00	
39	00	00	
3A	00	00	
3B	00	00	
3C	00	00	
3D	00	00	
3E	00	00	
3F	00	00	
40 to 47			Fixed data-1
48			Fixed data-2 (Modified data. Copy the data built in the same model.)
49			
4A			
4B			
4C			Fixed data-1
4D			Fixed data-2
4E to 53			Fixed data-1
54			Fixed data-2 (Modified data. Copy the data built in the same model.)
55			
56			
57			
58			
59			
5A to 5F			Fixed data-1
60			Fixed data-2 (Modified data. Copy the data built in the same model.)
61			
62			
63			
64			
65			
66 to 67			Fixed data-1
68			Fixed data-2
69			
6A to 76			Fixed data-1
77			Fixed data-2
78			
79 to 86			Fixed data-1
87	00	00	Emergency memory address (Camera section)
88	00	00	
89	00	00	
8A	00	00	
8B to F5			Fixed data-1
F6			Fixed data-2 (Modified data. Copy the data built in the same model.)
F7			
F8			
F9			
FA			
FB to FF			Fixed data-1

Table. 6-1-13.

7. 1E Page Table

Note1: When reading or writing the 1E page data, select page: 0, address: 10, and set data: 01, then select E page. The 1E page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 14, 19, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 14, 19, 1E, 1F Page Data").

Address	Remark
00 to 17	Fixed data-1
18	Fixed data-2 (Modified data. Copy the data built in the same model.)
19	
1A	
1B	Fixed data-1
1C	Fixed data-2 (Modified data. Copy the data built in the same model.)
1D	
1E	
1F to AC	Fixed data-1
AD	Fixed data-2
AE to C8	Fixed data-1
C9	Fixed data-2
CA to D0	Fixed data-1
D1	Fixed data-2
D2	
D3	Fixed data-1
D4	Fixed data-2
D5	
D6 to D9	Fixed data-1
DA	Fixed data-2 (Modified data. Copy the data built in the same model.)
DB	
DC	
DD to DF	Fixed data-1
E0	Fixed data-2 (Modified data. Copy the data built in the same model.)
E1	
E2	
E3	
E4 to F0	Fixed data-1
F1	Fixed data-2 (Modified data. Copy the data built in the same model.)
F2	
F3	
F4 to FF	Fixed data-1

Table. 6-1-14.

8. 1F Page Table

Note1: When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 14, 19, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 14, 19, 1E, 1F Page Data")

Address	Remark
00 to 39	Fixed data-1
3A	Fixed data-2
3B to 69	Fixed data-1
6A	Fixed data-2
6B to 8D	Fixed data-1
8E	Fixed data-2
8F to 95	Fixed data-1
96	Fixed data-2
97	
98 to AB	Fixed data-1
AC	Fixed data-2 (Modified data. Copy the data built in the same model.)
AD	
AE	
AF	
B0 to B8	Fixed data-1
B9	Fixed data-2
BA	
BB to C9	Fixed data-1
CA	Fixed data-2 (Modified data. Copy the data built in the same model.)
CB	
CC	
CD	
CE to D1	Fixed data-1
D2	Fixed data-2
D3 to D9	Fixed data-1
DA	Fixed data-2
DB to E4	Fixed data-1
E5	Fixed data-2
E6 to FF	Fixed data-1

Table. 6-1-15.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments (except for "54MHz/67.5MHz Origin Oscillation Adjustment"), check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.
And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1. 54MHz/67.5MHz Origin Oscillation Adjustment (CD-537 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Note1: 54MHz ..... DCR-PC350E (PAL)
67.5MHz ..... DCR-PC350 (NTSC)

Subject	Not required
Measurement Point	Pin ⑯ of IC1601 on VC-370 board (R1606)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	10
Specified Value	f = 13500000 ± 68Hz

Note2: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	10		Change the data and set the frequency (f) to the specified value.
3	F	10		Press PAUSE button.
4	0	01	00	Set the data.

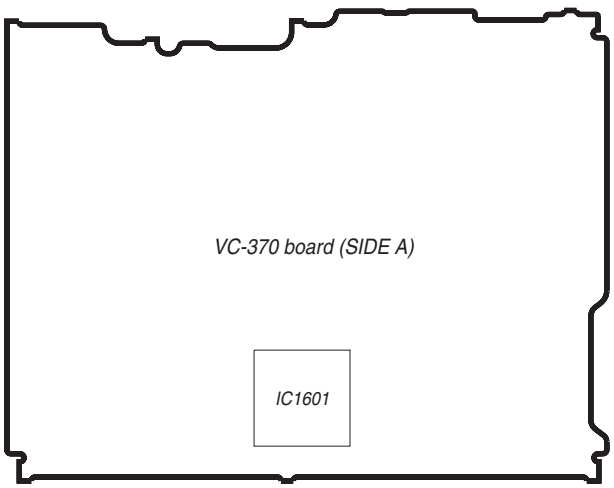


Fig. 6-1-8.

2. HALL Adjustment RadarW

For detecting the position of the lens iris and ND filter, adjust AMP gain and offset.

Subject	Not required	
Measurement Point	Display data of page 1 (Note1)	
Measuring Instrument	Adjustment remote commander	
Adjustment Page	F	19 (Note2)
Adjustment Address	13 to 18, 92	24 to 27
Specified Value 1	D6 to DA	
Specified Value 2	26 to 2A	
Specified Value 3	D3 to DD	
Specified Value 4	23 to 2D	

Note1: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
- XX (rightmost): IRIS display data
- XX (middle): ND display data

Note2: When reading or writing the 19 page data, select page: 0, address: 10, and set data: 01, then select 9 page. The 19 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Switch setting:

POWER ..... CAMERA-TAPE

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01	6D	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01" within 50 sec. (Note3)
5	6	01	00	Set the data, and press PAUSE button.

Note3: The adjustment data will be automatically input to page: F, address: 13 to 18, 92 and to page: 19, address: 24 to 27.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	Set the data.
2	0	10	00	Set the data.
3	6	01	01	Set the data, and press PAUSE button.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the IRIS display data (Note1) satisfies the specified value 1.
6	6	01	01	Set the data, and press PAUSE button.
7	1			Check that the IRIS display data (Note1) satisfies the specified value.2.
8	6	01	6B	Set the data, and press PAUSE button.
9	6	01	69	Set the data, and press PAUSE button.
10	1			Check that the ND display data (Note1) satisfies the specified value 3.
11	6	01	6B	Set the data, and press PAUSE button.
12	1			Check that the ND display data (Note1) satisfies the specified value.4.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	03	00	Set the data.
2	0	10	00	Set the data.
3	6	01	00	Set the data, and press PAUSE button.
4	0	01	00	Set the data.

3. MR Adjustment RadarW

The MR (Magnet resistor) adjustment of the inner focus lens is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Not required
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	58, 5A to 65
Specified Value1	40 to C0
Specified Value2	03 to 70
Specified Value3	90 to FD

Note1: Make the lens horizontal and perform this adjustment.
Note2: Perform this adjustment before “Flange Back Adjustment”.
Note3: The data of page: 0, address: 10 must be “00”.
Note4: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA-TAPE

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	BD	Set the data, and press PAUSE button.
3	6	02		Check that the data changes to “01”. (Note5)
4	F	5A		Check that the data satisfies the specified value 1.
5	F	5B		Check that the data satisfies the specified value 1.
6	F	5C		Check that the data satisfies the specified value 1.
7	F	5D		Check that the data satisfies the specified value 1.
8	F	5E		Check that the data satisfies the specified value 2.
9	F	5F		Check that the data satisfies the specified value 3.
10	F	60		Check that the data satisfies the specified value 2.
11	F	61		Check that the data satisfies the specified value 3.
12	F	62		Check that the data satisfies the specified value 2.
13	F	63		Check that the data satisfies the specified value 3.
14	F	64		Check that the data satisfies the specified value 2.
15	F	65		Check that the data satisfies the specified value 3.

Note5: The adjustment data will be automatically input to page: F, address: 58, 5A to 65.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Turn off the power and turn on again

4. CCD Output 2ch Matching Adjustment (1) RadarW

Correct the dispersion of the black level between the left-right channels of the CCD imager.

Subject	Arbitrary	
Adjustment Page	F	19 (Note3)
Adjustment Address	24 to 27	20 to 23, 2A to 2D

Note1: This adjustment should be carried out upon completion of the following adjustments.
"HALL Adjustment"

Note2: After this adjustment, perform the following adjustments.
"CCD Output 2ch Matching Adjustment (2)", "Flange Back Adjustment", "Color Reproduction Adjustment"

Note3: When reading or writing the 19 page data, select page: 0, address: 10, and set data: 01, then select 9 page. The 19 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01	F3	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note4)

Note3: The adjustment data will be automatically input to page: F, address: 24 to 27 and to page: 19, address: 20 to 23, 2A to 2D.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3				Perform "CCD Output 2ch Matching Adjustment (2)".

5. CCD Output 2ch Matching Adjustment (2) RadarW

Correct the dispersion between the left-right channels of the CCD imager.

Subject	Clear chart (All white) (Note1)
Adjustment Page	19 (Note2)
Adjustment Address	2E to 3F

Note1: Shoot the clear chart with the zoom TELE end.

Note2: This adjustment should be carried out upon completion of the following adjustments.
CCD Output 2ch Matching adjustment (1)

Note3: When reading or writing the 19 page data, select page: 0, address: 10, and set data: 01, then select 9 page. The 19 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) ZOOM ..... TELE end

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	2C	01	Set the data.
4	6	40	01	Set the data.
5	6	01	F5	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01" in about 60 seconds after pressing PAUSE button.

Note4: The adjustment data will be automatically input to page: 19, address: 2E to 3F

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	6	2C	00	Set the data.
4	6	40	00	Set the data.
5	0	01	00	Set the data.

6. Flange Back Adjustment (Using Minipattern Box or Flange Back Adjustment Jig) RadarW

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Flange back adjustment jig or minipattern box (Siemens star chart with ND filter (Note1))
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	48 to 58
Specified Value	Data of page: F, address: 57 is “00” to “09”. Data of page: 6, address: 0C is “00”.

Note1: Dark Siemens star chart.
Note2: This adjustment should be carried out upon completion of the following adjustments.
“HALL Adjustment”, “MR Adjustment”,
“CCD Output 2ch Matching Adjustment”
Note3: Make the lens horizontal and perform this adjustment.
Note4: The data of page: 0, address: 10 must be “00”.
Note5: Check that the data of page: 6, address: 02 is “00”. If not, turn off the power and turn on again.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) COLOR SLOW SHUTTER (CAMERA SET menu) ..... OFF

Preparations for the minipattern box:

1) The minipattern box is installed as shown in the following figure.
Note: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
3) Make the height of the minipattern box and the camcorder equal.
4) Check that the output voltage of the regulated power supply is the specified voltage.
5) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

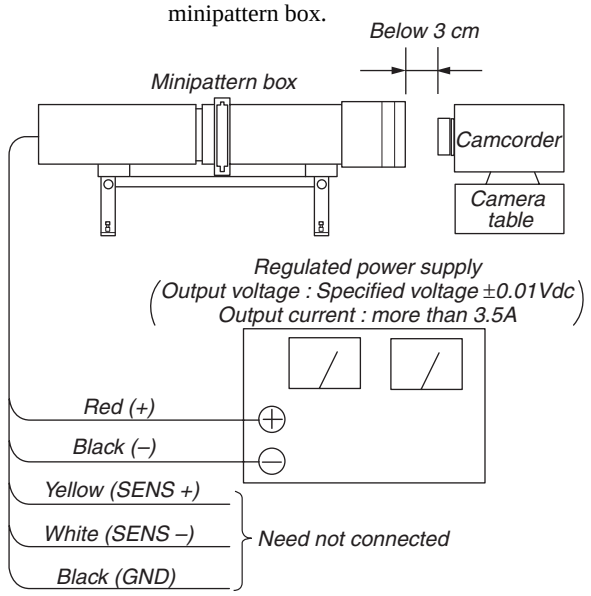


Fig. 6-1-9 (1).

Preparations for the flange back adjustment jig:

1) Install the flange back adjustment jig so that the distance between it and the front of the lens of the camcorder is less than 3cm.
2) Adjust the illumination intensity to the chart of the flange back adjustment jig. (350 ± 50 lux)
3) Check that at both the zoom TELE end and WIDE end, the center of the chart and center of the monitor TV screen coincide.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3				Wait for 2 sec.
4	6	01	27	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note6)
6	6	0C		Check that the data is “00”.
7	F	57		Check that the data is “00” to “09”.

Note6: The adjustment data will be automatically input to page: F, address: 48 to 58.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	01	25	Set the data, and press PAUSE button.
3	6	01	00	Set the data, and press PAUSE button.
4	0	01	00	Set the data.
5				Perform “Flange Back Check”.

Preparation of Flange Back Adj.
(Using the flange back adjustment jig)
(Luminance: about 300 lux)

1) Install the flange back adjustment jig so that the distance between it and the front of lens of camera is less than 3 cm.
2) Make the height of flange back adjustment jig and the camera equal.
3) Check that the center of chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

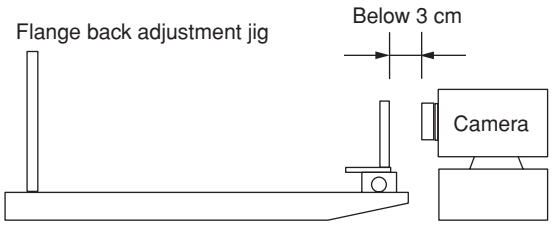


Fig. 6-1-9 (2).

7. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

7-1. Flange Back Adjustment (1) RadarW

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 50 lux)
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	48 to 58
Specified Value	Data of page: F, address: 57 is "00" to "09". Data of page: 6, address: 0C is "00".

Note1: This adjustment should be carried out upon completion of the following adjustments.
"HALL Adjustment", "MR Adjustment"
"CCD Output 2ch Matching Adjustment"
Note2: Make the lens horizontal and perform this adjustment.
Note3: The data of page: 0, address: 10 must be "00".
Note4: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) COLOR SLOW SHUTTER (CAMERA SET menu) ..... OFF

Preparations:

1) Check that at both the zoom lens TELE end and WIDE end, the center of the chart for the flange back adjustment and center of the exposure screen coincide.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3				Wait for 2 sec.
4	6	01	15	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note5)
6	6	0C		Check that the data is "00".
7	F	57		Check that the data is "00" to "09".

Note5: The adjustment data will be automatically input to page: F, address: 48 to 58.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	01	25	Set the data, and press PAUSE button.
3	6	01	00	Set the data, and press PAUSE button.
4	0	01	00	Set the data.
5				Perform "Flange Back Adjustment (2)"

7-2. Flange Back Adjustment (2) RadarW

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	48 to 58

Note1: Make the lens horizontal and perform this adjustment.
Note2: The data of page: 0, address: 10 must be "00".
Note3: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) COLOR SLOW SHUTTER (CAMERA SET menu) ..... OFF

Preparations:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3				Wait for 2 sec.
4				Place a ND filter on the lens so that the optimum image is obtain.
5	6	01	29	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 48 to 58.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	01	25	Set the data, and press PAUSE button.
3	6	01	00	Set the data, and press PAUSE button.
4	0	01	00	Set the data.
5				Perform "Flange Back Check"

8. Flange Back Check

8-1. Flange Back Check (Using Flange Back Adjustment Jig)

Subject	Flange back adjustment jig (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Note: The data of page: 0, address: 10 must be "00".

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF

Preparations:

1) Install the flange back adjustment jig so that the distance between it and the front of the lens of the camcorder is less than 3cm.
2) To open the IRIS, decrease the luminous intensity to the chart of the flange back adjustment jig up to a point before noise appear on the image. (Approx. 200 lux)
3) Check that at both the zoom TELE end and WIDE end, the center of the chart and center of the monitor TV screen coincide.

Checking method:

Order	Page	Address	Data	Procedure
1	6	40	01	Set the data.
2	6	41	01	Set the data.
3				Shoot the chart with the zoom TELE end.
4	6	2C	02	Set the data.
5				Check that the lens is focused.
6				Shoot the chart with the zoom WIDE end.
7				Check that the lens is focused.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	2C	00	Set the data.
2	6	40	00	Set the data.
3	6	41	00	Set the data.

8-2. Flange Back Check (Using Siemens Star)

Subject	Siemens star (2.0m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Note1: The data of page: 0, address: 10 must be "00".

Note2: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.

1) Select page: 0, address: 03, and set data: 0F.
2) Page 1 shows the state of the focus.

1 : 00 : XX
- Odd: Focused
- Even: Unfocused

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF

Preparations:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image. (Approx. 200 lux)

Checking method:

Order	Page	Address	Data	Procedure
1	6	40	01	Set the data.
2	6	41	01	Set the data.
3				Shoot the chart with the zoom TELE end.
4				Turn on the auto focus.
5				Check that the lens is focused. (Note2).
6	6	21	10	Set the data.
7				Shoot the chart with the zoom WIDE end.
8				Check that the lens is focused.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	21	00	Set the data.
2	6	40	00	Set the data.
3	6	41	00	Set the data.
4	0	03	00	Set the data.

9. Picture Frame Setting (Color Reproduction Adjustment Frame)

When performing “Color Reproduction Adjustment” and “Mixed Color Compensation Adjustment”, set the picture frame to “Color reproduction adjustment frame”.

Subject	Color bar chart (Color reproduction adjustment frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens)
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	Oscilloscope, TV monitor (Under scan mode)
Specified Value	A=B, C=D, E=F

Note1: This adjustment should be carried out upon completion of “HALL Adjustment” and “Flange Back Adjustment”.
Note2: The data of page: 0, address: 10 must be “00”.
Note3: Displayed data of the adjustment remote commander.

1 : XX : XX
- XX (right): XL or YL data
- XX (left): XH or YH data

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.

Order	Page	Address	Data	Procedure
1	0	03	18	Set the data.
2	1			Read XH data and XL data. (Note3)
3	0	03	22	Set the data.
4	1			Read YH data and YL data. (Note3)

Note4: When using the clear chart, remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)

How to reset the zoom and focus when they deviated:

If the zoom and focus deviated due to some reason, reset them in the following method.

Order	Page	Address	Data	Procedure
1	6	90	XL	Set the data. (Note5)
2	6	91	XH	Set the data. (Note5)
3	6	92	YL	Set the data. (Note5)
4	6	93	YH	Set the data. (Note5)
5	6	01	79	Set the data, and press PAUSE button.

Note5: XL, XH, YL and YH are the data read in the “Setting method”.
Note6: This picture frame setting can be released in the following method.

How to release the picture frame setting:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	6	90	00	Set the data.
4	6	91	00	Set the data.
5	6	92	00	Set the data.
6	6	93	00	Set the data.

Check on the oscilloscope

1. Horizontal period

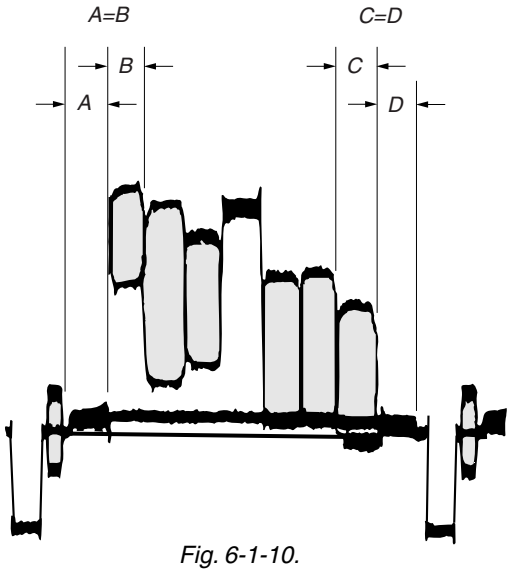


Fig. 6-1-10.

2. Vertical period

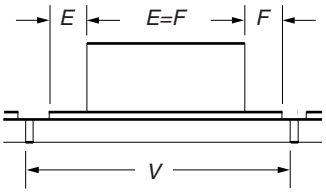


Fig. 6-1-11.

Check on the monitor TV (Underscanned mode)

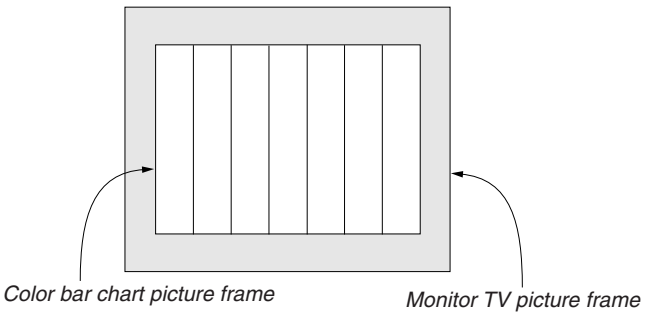


Fig. 6-1-12.

10. Mixed Color Compensation Adjustment RadarW

Compensate the mixed colors of the CCD color filters so that proper color reproduction is produced.

Subject	Mixed color compensation chart (Color reproduction adjustment frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens)
Measurement Point	Display data of page 1 (Note4)
Measuring Instrument	Adjustment remote commander
Adjustment Page	14 (Note2)
Adjustment Address	98 to 9F, A8 to B7
Specified Value 1	bit15 is "1"

Note1: This adjustment should be carried out upon completion of "CCD Output 2ch Matching Adjustment".

Note2: When reading or writing the 14 page data, select page: 0, address: 10, and set data: 01, then select 4 page. The 14 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note4: Displayed data of the adjustment remote commander.
1 : XX : XX
└── Display data

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Picture frame setting:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	90	XL	Set the data. (Note5)
3	6	91	XH	Set the data. (Note5)
4	6	92	YL	Set the data. (Note5)
5	6	93	YH	Set the data. (Note5)
6	6	01	79	Set the data, and press PAUSE button.
7				Check that the mixed color compensation chart is located in the center of the screen.

Note5: XL, XH, YL and YH are the data read in the "9. Picture Frame Setting (Color Reproduction Adjustment Frame)".

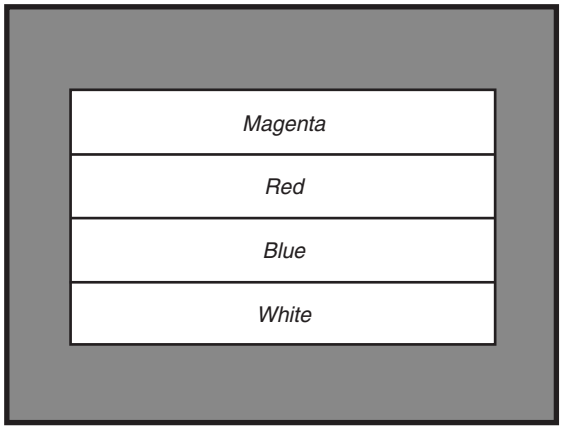


Fig. 6-1-13.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	D5	Set the data, and press PAUSE button.
3				Wait for 1 sec.
4	6	01	D7	Set the data, and press PAUSE button.
5	0	03	33	Set the data.
6	6	02		Check that the data is "01". (Note6)
7	1			Check that bit15 of the display data (Note4) is "1". (Note7)

Note6: The adjustment data will be automatically input to page: 14, address: 98 to 9F, A8 to B7.

Note7: When bit15 of the display data is "1", the display data is "8000" to "FFFF".

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	6	90	00	Set the data.
4	6	91	00	Set the data.
5	6	92	00	Set the data.
6	6	93	00	Set the data.
7	0	01	00	Set the data.
8	0	03	00	Set the data.

11. ND ON/OFF Adjustment RadarW

Adjustment to reduce the difference in the amount of light when the ND filter is on and when the ND filter is off.

Subject	Clear chart (All white frame with zoom WIDE end) (Note1) (0.4m (PTB-450) or 0.16m (PTB-1450) from the front of the lens)
Adjustment Page	19 (Note2)
Adjustment Address	28

Note1: Shoot the clear chart with the zoom WIDE end. And adjust the direction of the camera so that the chart is located in the center of the screen.

Note2: When reading or writing the 19 page data, select page: 0, address: 10, and set data: 01, then select 9 page. The 19 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) ZOOM ..... WIDE end
4) FOCUS ..... MANUAL
5) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
6) STEADY SHOT (CAMERA SET menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	65	AE	Set the data.
4	6	C9	10	Set the data.
5	F	A1		Memorize the data.
6	F	A1	C0	Set the data.
7	6	01	71	Set the data, and press PAUSE button.
8	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: 19, address: 28.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	F	A1		Set the memorized data, and press PAUSE button.
3	6	65	00	Set the data.
4	6	C9	00	Set the data.
5	6	01	00	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

12. Picture Frame Setting (All White Frame) RadarW

When performing "Auto White Balance Standard Data Input", "LV Standard Data Input", "Auto White Balance Adjustment" and "White Balance Check", set the picture frame to "All white frame".

Subject	Clear chart (All white frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens)
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	TV monitor (Under scan mode)
Specified Value	Whole of the screen is white

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Setting method:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	90	70	Set the data.
3	6	91	02	Set the data.
4	6	92	00	Set the data.
5	6	93	46	Set the data.
6	6	01	79	Set the data, and press PAUSE button.
7				Check that the whole of the screen is white.
8				Perform the following adjustments.

How to release the picture frame setting:

After completing "Auto White Balance Standard Data Input", "LV Standard Data Input", "Auto White Balance Adjustment" and "White Balance Check", release the data setting.

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	6	90	00	Set the data.
4	6	91	00	Set the data.
5	6	92	00	Set the data.
6	6	93	00	Set the data.

13. Auto White Balance Standard Data Input RadarW

Adjust the white balance reference at 3200K.

Subject	Clear chart (All white frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens) (Note4)	
Adjustment Page	F	14 (Note2)
Adjustment Address	2E to 31	E8 to F3

Note1: This adjustment should be carried out upon completion of "ND ON/OFF Adjustment".

Note2: When reading or writing the 14 page data, select page: 0, address: 10, and set data: 01, then select 4 page. The 14 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note4: Perform "12. Picture Frame Setting (All White Frame)" before this adjustment.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that the picture frame is "All white frame". If not, perform "12. Picture Frame Setting (All White Frame)".
2	0	01	01	Set the data.
3	0	10	00	Set the data.
4				Wait for more than 2 sec.
5	6	01	43	Set the data, and press PAUSE button.
6	6	01	41	Set the data, and press PAUSE button.
7	6	02		Check that the data changes to "01". (Note5)

Note5: The adjustment data will be automatically input to page: F, address: 2E to 31 and to page: 14, address: E8 to F3

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	0	01	00	Set the data.
4				Perform "LV Standard Data Input".
5				If finish the camera system adjustments, perform "How to release the picture frame setting" of "12. Picture Frame Setting (All White Frame)".

14. LV Standard Data Input RadarW

Adjust the normal coefficient of the light value.

Subject	Clear chart (All white frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens) (Note4)
Measurement Point	Display data of page 1 (Note5)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1A, 1B
Specified Value	0FE0 to 1020

Note1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input".

Note2: The data of page: 0, address: 10 must be "00".

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note4: Perform "12. Picture Frame Setting (All White Frame)" before this adjustment.

Note5: Displayed data of the adjustment remote commander.
1 : XX : XX
└── Display data

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that the picture frame is "All white frame". If not, perform "12. Picture Frame Setting (All White Frame)".
2	0	01	01	Set the data.
3	6	C9	10	Set the data.
4				Wait for more than 6 sec.
5	6	01	0D	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01" within 20 sec. (Note6)
7	0	03	1E	Set the data.
8	1			Check that the display data (Note5) satisfies the specified value.

Note6: The adjustment data will be automatically input to page: F, address: 1A, 1B.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	C9	00	Set the data.
3	0	03	00	Set the data.
4	0	01	00	Set the data.
5				Perform "Auto White Balance Adjustment".
6				If finish the camera system adjustments, perform "How to release the picture frame setting" of "12. Picture Frame Setting (All White Frame)".

15. Auto White Balance Adjustment RadarW

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (All white frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens) (Note3)	
Filter	Filter C14 for color temperature correction	
Adjustment Page	F	14 (Note2)
Adjustment Address	32 to 35, 44 to 47	F4 to FF

Note1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input".

Note2: When reading or writing the 14 page data, select page: 0, address: 10, and set data: 01, then select 4 page. The 14 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note3: Perform "12. Picture Frame Setting (All White Frame)" before this adjustment.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2				Check that the picture frame is "All white frame". If not, perform "12. Picture Frame Setting (All White Frame)".
3	0	01	01	Set the data.
4				Wait for more than 2 sec.
5	0	10	00	Set the data.
6	F	44	2D	Set the data, and press PAUSE button.
7	F	45	20	Set the data, and press PAUSE button.
8	F	46	5A	Set the data, and press PAUSE button.
9	F	47	80	Set the data, and press PAUSE button.
10	6	01	47	Set the data, and press PAUSE button.
11	6	01	45	Set the data, and press PAUSE button.
12	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 32 to 35, 44 to 47 and to page: 14, address: F4 to FF

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	0	01	00	Set the data.
4				Remove the C14 filter.
5				If finish the camera system adjustments, perform "How to release the picture frame setting" of "12. Picture Frame Setting (All White Frame)".

16. Color Reproduction Adjustment RadarW

Adjust the color separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens)
Adjustment Page	14 (Note1)
Adjustment Address	A0 to A7

Note1: When reading or writing the 14 page data, select page: 0, address: 10, and set data: 01, then select 4 page. The 14 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Picture frame setting:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	6	1F	10	Set the data.
3	6	90	XL	Set the data. (Note2)
4	6	91	XH	Set the data. (Note2)
5	6	92	YL	Set the data. (Note2)
6	6	93	YH	Set the data. (Note2)
7	6	01	79	Set the data, and press PAUSE button.
8				Check that the picture frame becomes "Color reproduction adjustment frame". (Refer to "9. Picture Frame Setting (Color Reproduction Adjustment Frame)".)

Note2: XL, XH, YL and YH are the data read in the "9. Picture Frame Setting (Color Reproduction Adjustment Frame)".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	1F	10	Set the data.
4	6	C9	10	Set the data.
5	6	9E	00	Set the data.
6	6	9D	31	Set the data.
7	6	01	61	Set the data, and press PAUSE button.
8	6	02		Check that the data is "01". (Note3)

Note3: The adjustment data will be automatically input to page: 14, address: A0 to A7

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	01	00	Set the data.
2	0	10	00	Set the data.
3	6	01	00	Set the data, and press PAUSE button.
4	6	9D	00	Set the data.
5	6	C9	00	Set the data.
6				Perform "Color Reproduction Check".

17. Color Reproduction Check RadarW

Subject	Color bar chart (Color reproduction adjustment frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens)
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	Vectorscope
Specified Value	Fig. 6-1-14.

Note1: The data of page: 0, address: 10 must be Åg00".
Note2: NTSC model: DCR-PC350
PAL model: DCR-PC350E

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Picture frame setting:

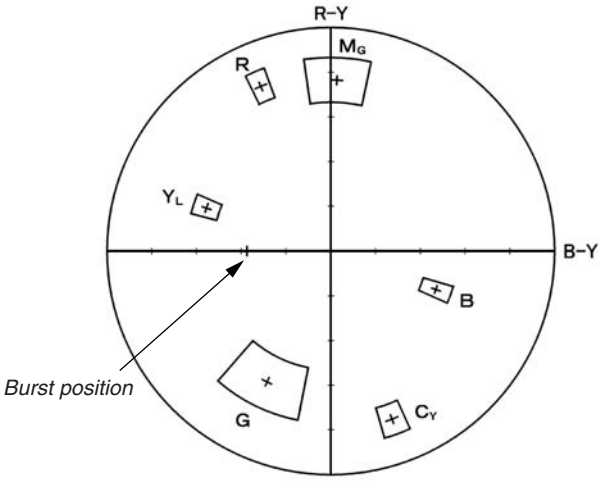
Order	Page	Address	Data	Procedure
1	6	1F	10	Set the data.
2	6	90	XL	Set the data. (Note4)
3	6	91	XH	Set the data. (Note4)
4	6	92	YL	Set the data. (Note4)
5	6	93	YH	Set the data. (Note4)
6	6	01	79	Set the data, and press PAUSE button.
7				Check that the picture frame becomes “Color reproduction adjustment frame”. (Refer to “9. Picture Frame Setting (Color Reproduction Adjustment Frame)”.)

Note4: XL, XH, YL and YH are the data read in the “9. Picture Frame Setting (Color Reproduction Adjustment Frame)”.

Checking method:

Order	Page	Address	Data	Procedure
1	6	1F	10	Set the data.
2	6	C9	10	Set the data.
3	6	9E	00	Set the data.
4	6	9D	31	Set the data.
5	6	01	4D	Set the data, and press PAUSE button.
6	6	02		Check that the data is “01”.
7				Adjust the GAIN and PHASE of the vectorscope so that the burst luminance point is set at the specified position.
8				Check that each center of all color luminance points is set in each color reproduction frame.

For NTSC model



For PAL model

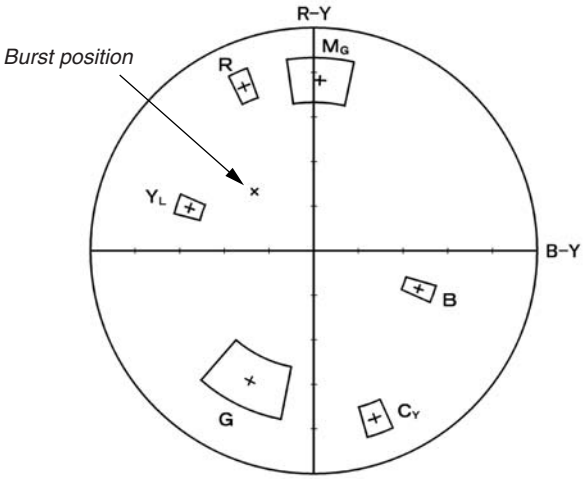


Fig. 6-1-14

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	1F	00	Set the data.
3	6	90	00	Set the data.
4	6	91	00	Set the data.
5	6	92	00	Set the data.
6	6	93	00	Set the data.
7	6	9D	00	Set the data.
8	6	C9	00	Set the data.

18. White Balance Check RadarW

Subject	Clear chart (All white frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens) (Note3)
Filter	ND filter 1.0 and 0.4 and 0.1
Measurement Point	Display data of page 1 (Note4)
Measuring Instrument	Adjustment remote commander
Specified Value 1	bit15 is “1”
Specified Value 2	bit15 is “1”
Specified Value 3	8000 to 8C00

Note1: If “Auto White Balance Adjustment” and “Color Reproduction Adjustment” are not performed before this adjustment, “Outdoor white balance check” may not satisfy the specified value 1.
Note2: The data of page: 0, address: 10 must be “00".
Note3: Perform “12. Picture Frame Setting (All White Frame)”.
Note4: Displayed data of the adjustment remote commander.
1 : XX : XX
└── Display data

Switch setting:
1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Checking method:

Order	Page	Address	Data	Procedure
1				Check that the lens is not covered with any filter.
2				Check that the picture frame is “All white frame”. If not, perform “12. Picture Frame Setting (All White Frame)”.
				Outdoor white balance check
3	6	CA		Set bit 0 of the data to “1”. (Note5)
4	6	01	4F	Set the data, and press PAUSE button.
5	0	03	33	Set the data.
6	1			Check that bit15 of the display data (Note4) is “1”. (Note6)
7	6	01	00	Set the data, and press PAUSE button.
8	6	CA		Set bit 0 of the data to “0”. (Note5)
				Indoor white balance check
9	6	CA		Set bit 0 of the data to “1”. (Note5)
10	6	01	0F	Set the data, and press PAUSE button.
11	0	03	33	Set the data.
12	1			Check that bit15 of the display data (Note4) is “1”. (Note6)
13	6	01	00	Set the data, and press PAUSE button.
14	6	CA		Set bit 0 of the data to “0”. (Note5)
				LV data check
15				Place the ND filter 1.5 (1.0+0.1+0.4) on the lens.
16	6	C9	11	Set the data.
17	6	30	07	Set the data.
18	0	03	06	Set the data.
19	1			Check that the display data (Note4) satisfies the specified value 3.

Note5: For the bit values, refer to “6-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.
Note6: When bit15 of the display data is “1”, the display data is “8000” to “FFF0”.
If the specified value is not satisfied. Contents of the error are displayed at the lower digit (bit0 to bit3) of the display data.
bit0=1: B-Y data exceeded an upper limit
bit1=1: B-Y data exceeded a lower limit
bit2=1: R-Y data exceeded an upper limit
bit3=1: R-Y data exceeded a lower limit

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	03	00	Set the data.
2	6	01	00	Set the data, and press PAUSE button.
3	6	30	00	Set the data.
4	6	90	00	Set the data.
5	6	91	00	Set the data.
6	6	92	00	Set the data.
7	6	93	00	Set the data.
8	6	C9	00	Set the data.
9				Remove the ND filter.

19. Outdoor White Balance Check Using Vectorscope RadarW

Subject	Clear chart (All white frame) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens) (Note1)
Filter	Filter C14 for color temperature correction
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	Vectorscope
Specified Value	Fig. 6-1-15.

Note1: Perform "12. Picture Frame Setting (All White Frame)".
Note2: If "Auto White Balance Adjustment" and "Color Reproduction Adjustment" are not performed before this adjustment, the specified value may not be satisfied.
Note3: The data of page: 0, address: 10 must be "00".

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) FOCUS ..... MANUAL
4) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
5) STEADY SHOT (CAMERA SET menu) ..... OFF

Checking method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2				Check that the picture frame is "All white frame". If not, perform "12. Picture Frame Setting (All White Frame)".
3	6	01	3F	Set the data, and press PAUSE button.
4				Wait for more than 3 sec.
5	6	11	40	Set the data.
6				Check that the center of the white luminance point is within the circle shown Fig. 6-1-15.

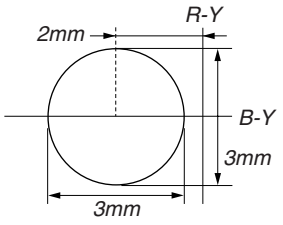


Fig. 6-1-15

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	11	00	Set the data.
3	6	90	00	Set the data.
4	6	91	00	Set the data.
5	6	92	00	Set the data.
6	6	93	00	Set the data.
7				Remove the C14 filter.

20. MAX GAIN Adjustment RadarW

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (All white frame with zoom WIDE end) (Note1) (1.0m (PTB-450) or 0.4m (PTB-1450) from the front of the lens)
Adjustment Page	F
Adjustment Address	19

Note1: Shoot the clear chart with the zoom WIDE end. And adjust the direction of the camera so that the chart is located in the center of the screen.
Note2: This adjustment should be carried out upon completion of "Flange Back Adjustment".
Note3: The data of page: 0, address: 10 must be "00".
Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.
Note5: NTSC model: DCR-PC350
PAL model: DCR-PC350E

Switch setting:

1) POWER ..... CAMERA-TAPE
2) NIGHT SHOT ..... OFF
3) ZOOM ..... WIDE end
4) FOCUS ..... MANUAL
5) DIGITAL ZOOM (CAMERA SET menu) ..... OFF
6) STEADY SHOT (CAMERA SET menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	C9	10	Set the data.
3	6	96		Set the following data. 25 (NTSC), 14 (PAL)
4	6	97	80	Set the data.
5	6	01	6F	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01" within 30 sec. (Note6)

Note6: The adjustment data will be automatically input to page: F, address: 19.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	96	00	Set the data.
2	6	97	00	Set the data.
3	6	C9	00	Set the data.
4	6	01	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

21. Mechanical Shutter Adjustment RadarW

Adjust the period which the mechanical shutter is closed for every F number, and compensate the exposure.

Adjustment Page	F
Adjustment Address	76 to 8B

Note1: The data of page: 0, address: 10 must be “00”.
Note2: NTSC model: DCR-PC350
PAL model: DCR-PC350E

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: F, addresses: 76 to 8B.

Note: Press the PAUSE button each time to set the data.

Address	Data	
	NTSC	PAL
76	C5	A4
77	00	00
78	86	6F
79	00	00
7A	67	55
7B	00	00
7C	51	43
7D	00	00
7E	3F	35
7F	00	00
80	50	4E
81	5D	5B
82	5A	57
83	4F	4B
84	3E	3A
85	20	20
86	7C	7E
87	81	81
88	80	80
89	80	80
8A	80	80
8B	7D	7D

3) Select page: 0, address: 01, and set data: 00.

22. Steady Shot Check RadarW

Precautions on the Parts Replacement

There are two types of repair parts.
Type A: ENC03MA
Type B: ENC03MB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Specified Value	2680 to 5080

Note1: Displayed data of the adjustment remote commander.
1 : XX : XX
└── Display data

Note2: The data of page: 0, address: 10 must be “00”.

Switch setting:

1) STEADY SHOT (CAMERA SET menu) ..... ON
2) ZOOM ..... TELE end

Adjusting method:

Order	Page	Address	Data	Procedure
				Pitch sensor check (SE-151 board SE2501)
1	0	03	11	Set the data.
2	1			Check that the display data (Note1) satisfies the specified value.
				Yaw sensor check (SE-151 board SE2500)
3	0	03	12	Set the data.
4	1			Check that the display data (Note1) satisfies the specified value.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	03	00	Set the data.
2				Move the camcorder, and check that the steady shot operations have been performed normally

23. Strobe Light Level Adjustment RadarW

Adjust the light level when the strobe light flashes.

Subject	Paper which reflection rate is 18% (50cm from the front of the lens)(Note1)
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	8C to 91
Specified Value	Data of page: 6, address: 0C is “00”.

Note1: Background paper (J-250-130-A). Perform this adjustment in the dark room or use the flash adjustment box. (Refer to “1-1-3.Precaution”.)
Note2: Any light other than the strobe light should not light up the paper.
Note3: This adjustment should be carried out upon completion of “HALL Adjustment”, “Flange Back Adjustment” and “F No. & ND Light Quantity Standard Data Input”.
Note4: The data of page: 0, address: 10 must be “00”.
Note5: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA-TAPE
2) FLASH ..... Forced flash (ϟ)
(Press FLASH (ϟ) button and set to the forced flash mode.)
3) NIGHT SHOT ..... OFF

How to reset the flash error flag

When the flash error self-diagnosis code (E: 91: **) is displayed. After repair, clear the error flag in the following method.

Order	Page	Address	Data	Procedure
1	7	01	75	Set the data.
2	7	00	01	Set the data, and press PAUSE button.
3	7	02		Check that the data is “01”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	01	7E	Set the data.
3	7	04	01	Set the data.
4	7	00	01	Set the data, and press PAUSE button.
5	6	65	AE	Set the data.
6	6	C9	10	Set the data.
7	6	01	67	Set the data, and press PAUSE button.
8				Check the flashing.
9	6	02		Check that the data is “01”. (Note6)
10	6	0C		Check that the data is “00”.

Note6: The adjustment data will be automatically input to page: F, address: 8C to 91.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	7	01	7E	Set the data.
3	7	04	00	Set the data.
4	7	00	01	Set the data, and press PAUSE button.
5	6	65	00	Set the data.
6	6	C9	00	Set the data.
7	0	01	00	Set the data.

24. Strobe White Balance Adjustment & Check RadarW

Adjust and check the white balance when the strobe light flashes.

Subject	Paper which reflection rate is 18% (50cm from the front of the lens)(Note1)
Measurement Point	Display data of page 1 (Note7)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	3E, 3F
Specified Value	bit15 is "1"

Note1: Background paper (J-250-130-A). Perform this adjustment in the dark room or use the flash adjustment box. (Refer to "1-1-3.Precaution".)
Note2: Any light other than the strobe light should not light up the paper.
Note3: This adjustment should be carried out upon completion of "HALL Adjustment", "Flange Back Adjustment", "Auto White Balance Adjustment" and "Strobe Light Level Adjustment"
Note4: After the power is turned on, this adjustment can be done only once.
Note5: The data of page: 0, address: 10 must be "00".
Note6: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.
Note7: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└── Display data

Switch setting:

1) MODE ..... CAMERA-TAPE
2) FLASH ..... Forced flash (ϟ)
(Press FLASH (ϟ) button and set to the forced flash mode.)
3) NIGHT SHOT ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	01	7E	Set the data.
3	7	04	01	Set the data.
4	7	00	01	Set the data, and press PAUSE button.
5	6	65	AE	Set the data.
6	6	C9	10	Set the data.
7	6	01	B9	Set the data, and press PAUSE button.
8				Check the flashing.
9	6	02		Check that the data is "01". (Note8)
10	6	01	00	Set the data, and press PAUSE button.
11				Wait for 3 sec.
12	6	01	E7	Set the data, and press PAUSE button.
13				Check the flashing.
14	0	03	33	Set the data.
15	1			Check that bit15 of the display data (Note7) is "1". (Note9)

Note8: The adjustment data will be automatically input to page: F, address: 3E, 3F.
Note9: When bit15 of the display data is "1", the display data is "8000" to "FFF0".
If the specified value is not satisfied. Contents of the error are displayed at the lower digit (bit0 to bit3) of the display data. (For the bit values, refer to "6-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)
bit0=1: The white balance is deviated in the blue direction
bit1=1: The white balance is deviated in the yellow direction
bit2=1: The white balance is deviated in the red direction
bit3=1: The white balance is deviated in the cyan direction

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	7	01	7E	Set the data.
3	7	04	00	Set the data.
4	7	00	01	Set the data, and press PAUSE button.
5	6	65	00	Set the data.
6	6	C9	00	Set the data.
7	0	01	00	Set the data.

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note3: As the PANEL OPEN switch is attached to the cabinet (R), this cabinet must be attached when performing adjustments.
If you perform the adjustments with cabinet (R) removed, set the following data.
1) Select page: 3, address: C4, and set data: 67.
2) Select page: 3, address: C5, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 3, address: C4, and set data: 00.
2) Select page: 3, address: C5, and set data: 00.

Note4: NTSC model : DCR-PC350
PAL model : DCR-PC350E

Switch setting:

LCD panel ..... Closed

1. EVF Automatic Adjustment (VC-370 board) RadarW

This adjustment does the following adjustment items automatically.
VCO adjustment
Contrast adjustment

Mode	CAMERA-TAPE
Subject	Arbitrary
Adjustment Page	C
Adjustment Address	3F, 40 (VCO adj.) 47 (Contrast adj.)

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	71	00	Set the data, and press PAUSE button.
3	3	01	5A	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to "00".
5	3	03		Check that the data is "00". (Note2)
6	C	3F		Read the data, and this data is named D_{3F}.
7				Convert D_{3F} to decimal notation, and obtain D_{3F}'. (Note3)
8				Calculate D_{40}' using following equations (Decimal calculation) [NTSC model] When $D_{3F}' \leqq 245$ $D_{40}' = D_{3F}' + 10$ When $D_{3F}' > 245$ $D_{40}' = 255$ [PAL model] When $D_{3F}' \geqq 10$ $D_{40}' = D_{3F}' - 10$ When $D_{3F}' < 10$ $D_{40}' = 0$
9				Convert D_{40}' to a hexadecimal number, and obtain D_{40}. (Note3)
10	C	40	D_{40}	Set the data, and press PAUSE button.
11	C	71	41	Set the data, and press PAUSE button.
12	0	01	00	Set the data.

Note2: If the data is "01", adjustment has errors. Contents of the error is written into page: 3, addresses: C6. See the following table.

Data of page: 3, address: C6	Contents of error
5E	VCO adjustment error
61	Contrast adjustment error

Note3: Refer to "Table 6-4-1. Hexadecimal-decimal Conversion Table".

2. White Balance Adjustment (VC-370 board)

Correct the white balance.
If deviated, the reproduction of the EVF screen may degenerate.

Mode	CAMERA-TAPE
Subject	Arbitrary
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	45, 46
Specified Value	The EVF screen should not be colored.

Note1: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC1650

Note2: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	45		Set the following data, and press PAUSE button. 8E (NTSC), 8D (PAL)
3	C	46		Set the following data, and press PAUSE button. 8C (NTSC), 8F (PAL)
4	C	46		Check that the EVF screen is not colored. If not colored, proceed to step 10.
5	C	45		Change the data so that the EVF screen is not colored.
6	C	45		Press PAUSE button.
7	C	46		Change the data so that the EVF screen is not colored.
8	C	46		Press PAUSE button.
9	C	46		If the EVF screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

1-5. LCD SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.
Note3: NTSC model : DCR-PC350
PAL model : DCR-PC350E

Switch setting:
LCD panel ..... Open

1. LCD Automatic Adjustment (PD-225 board) RadarW

This adjustment does the following adjustment items automatically.
VCO adjustment
Contrast adjustment

Mode	CAMERA-TAPE
Subject	Arbitrary
Adjustment Page	C
Adjustment Address	50, 51 (VCO adj.) 58 (Contrast adj.)

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	70	00	Set the data, and press PAUSE button.
3	3	01	5A	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to "00".
5	3	03		Check that the data is "00". (Note2)
6	C	50		Read the data, and this data is named D_{50}.
7				Convert D_{50} to decimal notation, and obtain D_{50}'. (Note3)
8				Calculate D_{51}' using following equations (Decimal calculation) [NTSC model] When $D_{50}' \leqq 245$ $D_{51}' = D_{50}' + 10$ When $D_{50}' > 245$ $D_{51}' = 255$ [PAL model] When $D_{50}' \geqq 10$ $D_{51}' = D_{50}' - 10$ When $D_{50}' < 10$ $D_{51}' = 0$
9				Convert D_{51}' to a hexadecimal number, and obtain D_{51}. (Note3)
10	C	51	D_{51}	Set the data, and press PAUSE button.
11	C	70	41	Set the data, and press PAUSE button.
12	0	01	00	Set the data.

Note2: If the data is "01", adjustment has errors. Contents of the error is written into page: 3, addresses: C6. See the following table.

Data of page: 3, address: C6	Contents of error
58	VCO adjustment error
60	Contrast adjustment error

Note3: Refer to "Table 6-4-1. Hexadecimal-decimal Conversion Table".

2. V COM Adjustment (PD-225 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	CAMERA-TAPE
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	C
Adjustment Address	52
Specified Value	The brightness difference between the section A and section B is minimum.

Note1: This adjustment should be carried out upon completion of the LCD automatic adjustment.
Note2: The data of page: 0, address: 10 must be "00".

Switch setting:
LCD BACKLIGHT ..... ON

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	61	0D	Set the data, and press PAUSE button.
3	C	52		Change the data so that the brightness of the section A and that of the section B is equal.
4	C	52		Subtract 4 from the data.
5	C	52		Press PAUSE button.
6	C	61	05	Set the data, and press PAUSE button.
7	0	01	00	Set the data.

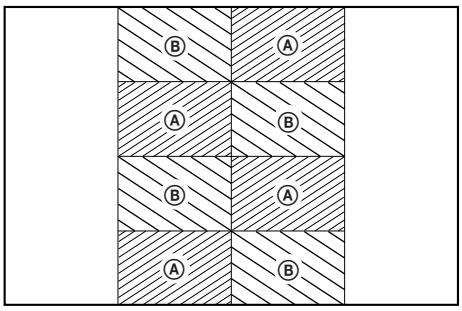


Fig. 6-1-16.

3. Transmissive Mode White Balance Adjustment (PD-225 board)

Correct the white balance of the transmissive mode.
If deviated, the reproduction of the LCD screen may degenerate.

Mode	CAMERA-TAPE
Subject	Arbitrary
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	56, 57
Specified Value	The LCD screen should not be colored.

Note1: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC602

Note2: The data of page: 0, address: 10 must be "00".

Switch setting:
LCD BACKLIGHT ..... ON

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	56		Set the following data, and press PAUSE button. 73 (NTSC), 7B (PAL)
3	C	57		Set the following data, and press PAUSE button. 6F (NTSC), 70 (PAL)
4	C	57		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	C	56		Change the data so that the LCD screen is not colored.
6	C	56		Press PAUSE button.
7	C	57		Change the data so that the LCD screen is not colored.
8	C	57		Press PAUSE button.
9	C	57		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

4. Reflective Mode White Balance Adjustment (PD-225 board) RadarW

Correct the white balance of the reflective mode.
If deviated, the reproduction of the LCD screen may degenerate.

Mode	CAMERA-TAPE
Subject	Arbitrary
Adjustment Page	C
Adjustment Address	7B, 7C

Note1: The data of page: 0, address: 10 must be “00”.

Switch setting:
LCD BACKLIGHT ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	0C	20	Set the data, and press PAUSE button.
3	3	22	0F	Set the data, and press PAUSE button.
4	3	01	66	Set the data, and press PAUSE button.
5	3	02		Check that the data changes to “00”.
6	3	03		Check that the data is “00”. (Note2)
7	3	01	67	Set the data, and press PAUSE button.
8	3	02		Check that the data changes to “00”.
9	3	03		Check that the data is “00”. (Note2)
10	3	0C	00	Set the data, and press PAUSE button.
11	3	22	00	Set the data, and press PAUSE button.
12	0	01	00	Set the data.

Note2: If the data is “01”, adjustment becomes time out.

6-2. MECHANISM SECTION ADJUSTMENT

On the mechanism section adjustment

For detail of mechanism section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL Ⅷ Z (Z200) Mechanism ".

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note2: The lens block (CD-537 board) must be connected when performing the adjustments.

2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0B, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-3. TAPE PATH ADJUSTMENT

1. Preparation for Adjustment

1) Clean the tape running side (tape guide, drum, capstan shaft, pinch roller, etc.).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-370 board CN1015 via the CPC-6 flexible jig (J-6082-370-C) and CPC-6 terminal board jig (J-6082-371-A).
   Channel 1: VC-370 board, CN1015 Pin ⑳ (Note)
   External trigger: VC-370 board, CN1015 Pin ⑰
   Note: Connect a 75Ω resistor between Pins ⑳ of CN1015 and ⑲ (GND).
5) Playback the alignment tape for tracking. (XH2-1)
6) Select page: 3, address: 33, and set data: 08.
7) Select page: 3, address: 26, set data: 31, and press PAUSE button.
8) Check that the oscilloscope RF waveform is normal at the entrance and exit.
   If not normal, adjust according to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL Ⅷ Z (Z200) Mechanism ".

CN1015 of VC-370 board

Pin No.	Signal Name	Pin No.	Signal Name
1	N. C.	2	D 2.8V
3	N. C.	4	N. C.
5	N. C.	6	REG GND
7	MD2	8	XCS MC FLASH
9	XSYS RST	10	EEP SI
11	EEP SO	12	EEP SCK
13	REC CRRT1	14	REC CRRT0
15	REG GND	16	XCS EEP
17	SWP	18	FRRV
19	REG GND	20	RF MON

Table. 6-2-1.

2. Processing after Completing Operations:

1) Connect the adjustment remote commander to the LANC jack and set the HOLD switch to the ON position.
2) Select page: 3, address: 26, and set data: 00, and press PAUSE button.
3) Select page: 3, address: 33, and set data: 00.

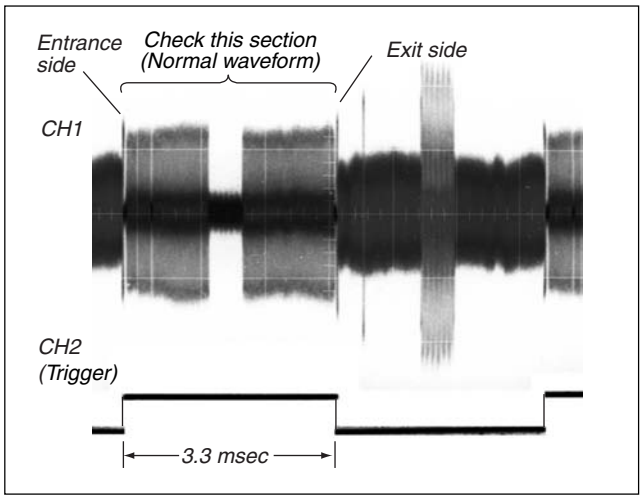


Fig. 6-2-1.

6-3. VIDEO SECTION ADJUSTMENT

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tapes
    - Tracking standard (XH2-1)
      Parts code: 8-967-997-01
    - SW/OL standard (XH2-3)
      Parts code: 8-967-997-11
    - Audio operation check for NTSC (XH5-3)
      Parts code: 8-967-997-51
    - System operation check for NTSC (XH5-5)
      Parts code: 8-967-997-61
    - Audio operation check for PAL (XH5-3P)
      Parts code: 8-967-997-55
    - System operation check for PAL (XH5-5P)
      Parts code: 8-967-997-66
12) Adjustment remote commander (J-6082-053-B)
13) CPC-6 flexible jig (J-6082-370-C)
14) CPC-6 terminal board jig (J-6082-371-A)

3-1-2. Precautions on Adjusting

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1) The adjustments of this unit are performed in the VTR mode (PLAY/EDIT mode) or camera mode (CAMERA-TAPE mode). To set to the VTR mode, set the mode switch to "PLAY/EDIT" or set the "Forced VTR Power ON mode" using the adjusting remote commander (Note2).
   To set to the camera mode, set the mode switch to "CAMERA-TAPE" or set the "Forced Camera Power ON mode" using the adjusting remote commander (Note3).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note5)
2) The cabinet (top) block (Microphone unit, intelligent accessory shoe) need not be connected. To remove it, disconnect the following connectors.
   SE-151 board CN2502 (10P, 0.5mm)
   SE-151 board CN2504 (4P, 0.8mm)
3) The cabinet (R) block (LCD panel, touch panel, PD-225 board, VP-060 board, CR-048 board) need not be connected except for the CR-048 board. (Use the adjustment remote commander, to operate the VTR block.) To remove the cabinet (R) block, disconnect the following connectors.
   VC-370 board CN1002 (60P, 0.4mm)
   VC-370 board CN1006 (40P, 0.4mm)
   As the DC IN jack is attached to the CR-048 board of the cabinet (R) block, the CR-048 board must be connected to the VC-370 board. So remove the CR-048 board from the cabinet (R). And connect it to the following connector of VC-370 board.
   VC-370 board CN1002 (60P, 0.4mm)
4) The lens block (Lens device, CD-537 board, ST-108 board) need not be connected except for the CD-537 board. To remove the lens block, disconnect the following connectors.
   VC-370 board CN1301 (33P, 0.3mm)
   VC-370 board CN1501 (80P, 0.4mm)
   ST-108 board CN500 (23P, 0.3mm)
   ST-108 board CN501 (33P, 0.3mm)
   As the timing generator (IC7303) is provided on the CD-537 board, connect the CD-537 board to the following connector of VC-370 board.
   VC-370 board CN1501 (80P, 0.4mm)
5) The EVF block (SE-151 board) and FP-995 flexible (A/V jack, LANC jack) must be assembled for connecting the adjusting remote commander. To remove the EVF block, disconnect the following connectors.
   VC-370 board CN1004 (60P, 0.4mm)
   SE-151 board CN2500 (12P, 0.5mm)
6) By setting the "Forced VTR Power ON mode", the VTR section can be operate even if the control key block (PS7450) has been removed. When removing it, disconnect the following connector.
   VC-370 board CN1008 (14P, 0.5mm)
7) The MS-234 board need not be connected. But removing the MS-234 board (removing the VC-370 board CN1020) means removing the lithium 3V power supply (MS-234 board, BT800), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data.
   But, the self-diagnosis data and the data on history of use (total drum rotation time etc.) will be kept even if the MS-234 board has been removed. (Refer to "6-4.Service Mode" for the data on the history use and the self-diagnosis data.)
   To remove the MS-234 board, disconnect the following connector.
   VC-370 board CN1020 (33P, 0.3mm)
8) The FP-996 flexible (Remote commander receiver, NIGHT SHOT LED) need not be connected. To remove it, disconnect the following connector.
   VC-370 board CN1001 (12P, 0.5mm)
9) The control key block (FK7450) need not be connected. To remove it, disconnect the following connector.
   VC-370 board CN1003 (26P, 0.5mm)

Note2: Setting the "Forced VTR Power ON" mode (PLAY/EDIT mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: A, address: 10, set data: 02, and press the PAUSE button of the adjusting remote commander.
The above procedure will enable the VTR power to be turned on with the control key block (PS7450) removed.
After completing adjustments, be sure to exit the "Forced Power ON mode".

Note3: Setting the "Forced Camera Power ON" mode (CAMERA-TAPE mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: A, address: 10, set data: 01, and press the PAUSE button of the adjusting remote commander.
The above procedure will enable the camera power to be turned on with the control key block (PS7450) removed.
After completing adjustments, be sure to exit the "Forced Power ON mode".

Note4: Setting the "Forced Memory Power ON" mode (CAMERA-MEMORY mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: A, address: 10, set data: 05, and press the PAUSE button of the adjusting remote commander.
The above procedure will enable the memory power to be turned on with the control key block (PS7450) removed.
After completing adjustments, be sure to exit the "Forced Power ON mode".

Note5: Exiting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: A, address: 10, set data: 00, and press the PAUSE button of the adjusting remote commander.
3) Select page: 0, address: 01, and set data: 0

3-1-3. Adjusting Connectors

The measuring point of the playback RF signal is CN1015 of VC-370 board. Connect the measuring instruments via the CPC-6 flexible jig (J-6082-370-C) and CPC-6 terminal board jig (J-6082-371-A). Refer to “MECHANISM SECTION ADJUSTMENT” for the measuring method. The following table lists the pin numbers and signal names of CN1015.

Pin No.	Signal Name	Pin No.	Signal Name
1	N.C.	2	D 2.8V
3	N.C.	4	N.C.
5	N.C.	6	REG GND
7	MD2	8	XCS MC FLASH
9	XSYS RST	10	EEP SI
11	EEP SO	12	EEP SCK
13	REC CRRT1	14	REC CRRT0
15	REG GND	16	XCS EEP
17	SWP	18	FRRV
19	REG GND	20	RF MON

Table 6-3-1.

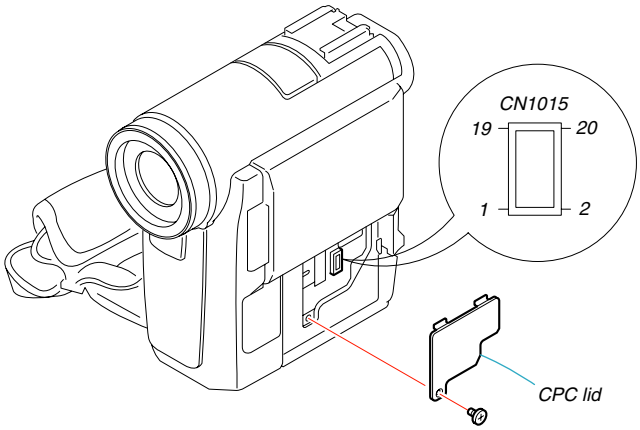


Fig. 6-3-1.

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 6-3-2, and perform the adjustments.

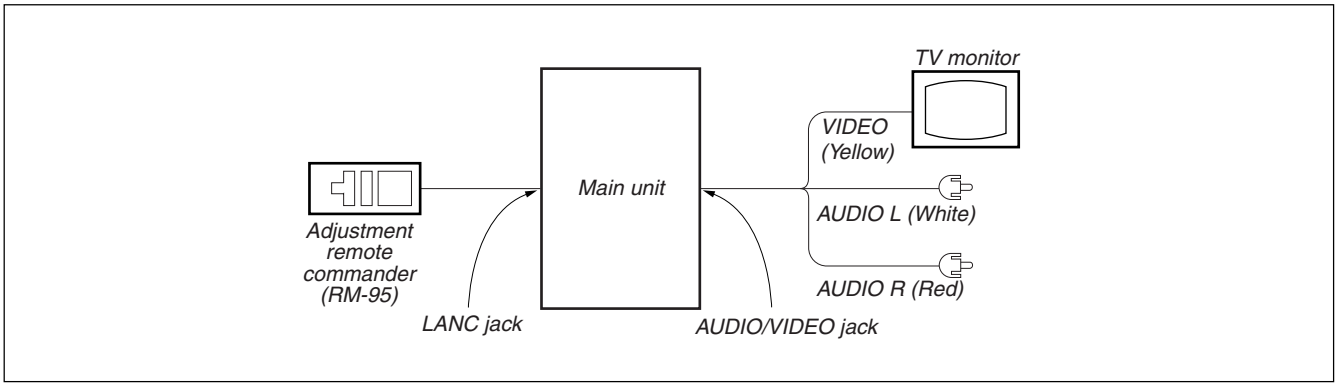


Fig. 6-3-2.

3-1-5. Alignment Tapes

Use the alignment tapes shown in the following table.
Use tapes specified in the signal column of each adjustment.

Name	Use
Tracking standard (XH2-1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH5-5P (PAL))	Operation check

Fig. 6-3-3. shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video terminal (Terminated at 75 Ω)

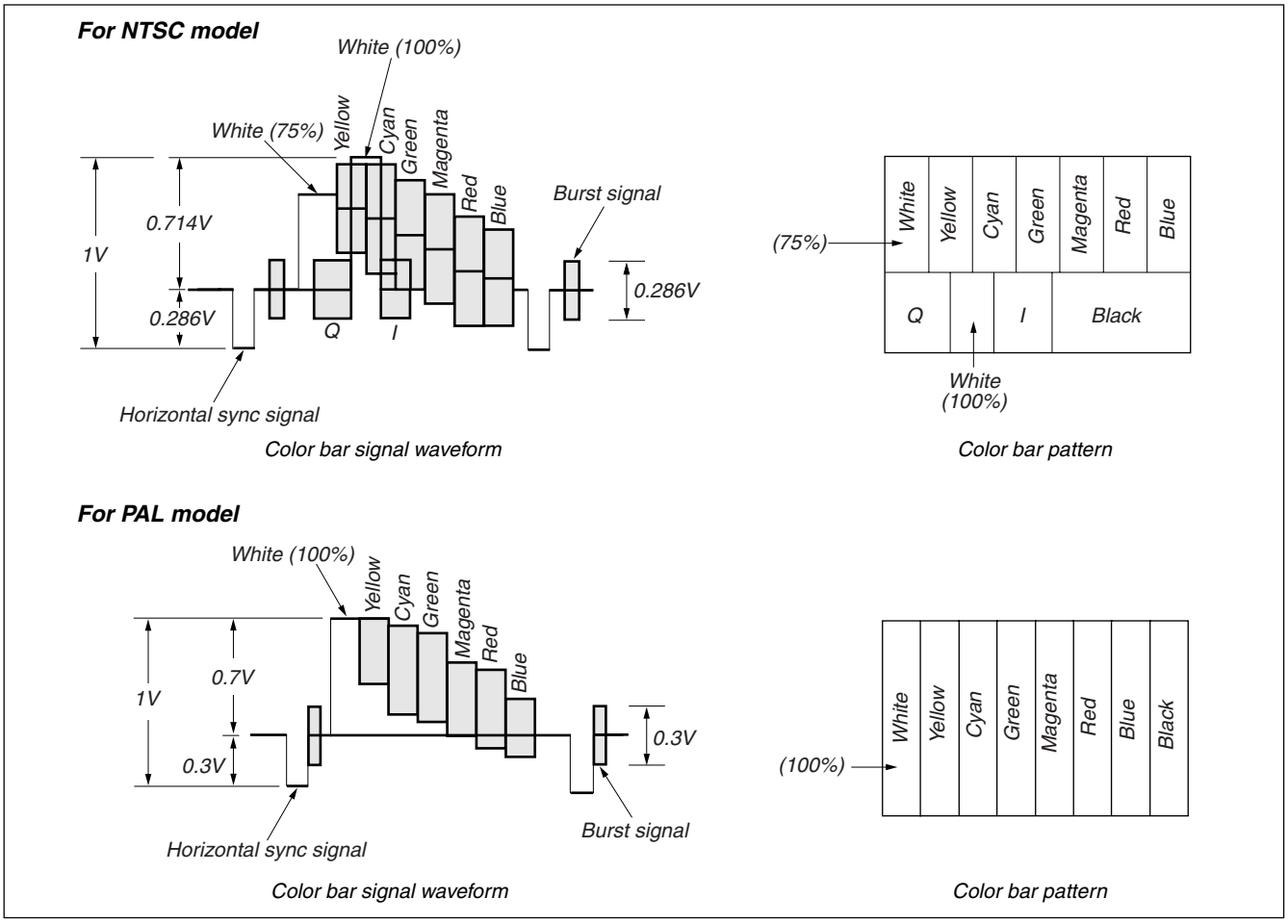


Fig. 6-3-3. Color bar signal of alignment tapes

3-1-6. Input/Output Level and Impedance

Video input/output
Special stereo mini jack
Video signal: 1 Vp-p, 75 Ω unbalanced, sync negative

S video input/output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω unbalanced, sync negative
Chrominance signal: 0.286 Vp-p, 75 Ω unbalanced (NTSC)
: 0.300 Vp-p, 75 Ω unbalanced (PAL)

Audio input/output
Special stereo mini jack
Input level: 327mV
Input impedance: More than 47kΩ
Output level: 327 mV (at load impedance 47 kΩ)
Output impedance: Below 2.2 kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F Page Data

If the 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F page data is erased due to some reason, perform "1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F PAGE DATA" of "6-1. CAMERA SECTION ADJUSTMENT"

Note: When reading or writing the 14, 18, 19, 1A, 1B, 1C, 1E, 1F page data, select page: 0, address: 10, and set data: 01, then select 4, 8, 9, A, B, C, E or F page. The 14, 18, 19, 1A, 1B, 1C, 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

2. Touch Panel Adjustment

Adjust the calibration of the touch panel.

Mode	PLAY/EDIT (VTR stop)
Signal	Arbitrary
Adjustment Page	A
Adjustment Address	90 to 93

Note1: This adjustment should be carried out upon completion of the LCD system adjustments.
Note2: Perform this adjustment with observing the screen from the front.
Note3: Check that a Memory Stick Duo is not inserted.
Note4: Check that the LCD panel is not reverse mode.
Note5: The data of page: 0, address: 10 must be "00".

Preparation:

Order	Page	Address	Data	Procedure
1	5	01	01	Set the data.
2	5	05	00	Set the data.
3	5	06	C7	Set the data.
4	5	07	00	Set the data.
5	5	08	00	Set the data.
6	5	09	00	Set the data.
7	5	0A	FF	Set the data.
8	5	0B	00	Set the data.
9	5	0C	00	Set the data.
10	5	0D	00	Set the data.
11	5	0E	01	Set the data.
12	5	00	01	Set the data, and press PAUSE button.
13				Check that the touch panel adjustment screen is displayed. (Fig. 6-3-4.)
14				Perform "Adjusting method".

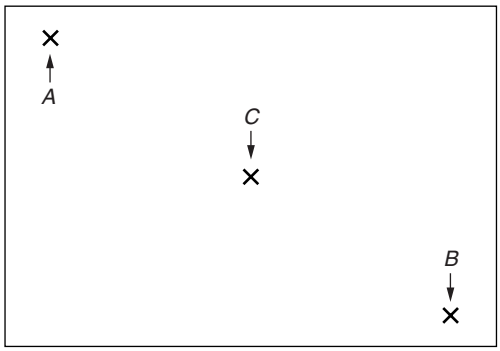


Fig. 6-3-4.

Adjusting method:

1) Using a stylus, push the center of "X" indicated in the part A.
2) Using a stylus, push the center of "X" indicated in the part B.
3) Using a stylus, push the center of "X" indicated in the part C.

3. Serial No. Input

3-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	C
Address	E0, E1, E2, E3, E4

Note: The data of page: 0, address: 10 must be "00".

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: C, addresses: E0 to E4.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
E0	08
E1	00
E2	46
E3	01
E4	02

3) Select page: 0, address: 01, and set data: 00.

3-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	C
Address	E5, E6, E7

Note: The data of page: 0, address: 10 must be "00".

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. on the name plate, and take it as D_1.
   Example: If the serial No. is 77881.
   D_1=77881
   Note: Use six digits of the low rank when a serial No. is more than seven digits.
3) Obtain D_2 and H_1 corresponding to D_1 from Table 6-3-2.
   Example: If D_1 is "77881".
   $D_2 = D_1 - 65536 = 12345$
   H_1 = FE
4) Input H_1 to page: C, address: E5. (Model code input)
   Example: If H_1 is "FE".
   Select page: C, address: E5, set data: FE, andpress the PAUSE button.
5) Obtain the maximum decimal not exceeding D_2 from Table 6-3-3, and take this as D_3.
   Example: If D_2 is "12345".
   D_3 = 12288
6) Obtain the hexadecimal corresponding to D_3 from Table 6-3-3, and take this as H_3.
   Example: If D_3 is "12288".
   H_3 = 3000
7) Obtain the difference D_4 between D_2 and D_3. (Decimal calculation, $0 \leqq D_4 \leqq 255$)
   $D_4 = D_2 - D_3$
   Example: If D_2 is "12345" and D_3 is "12288".
   D_4 =12345 – 12288 = 57
8) Convert D_4 to hexadecimal, and take this as H_4.
   (Refer to "Hexadecimal-decimal conversion table" in "6-4. Service Mode".)
   Example: If D_4 is "57".
   H_4=39
9) Input the upper 2 digits of H_3 to page: C, address: E6.
   Example: If H_3 is "3000".
   Select page: C, address: E6, set data: 30, and press the PAUSE button.
10) Input H_4 to page: C, address: E7.
    Example: If H_4 is "39".
    Select page: C, address: E7, set data: 39, and press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

D_1 (Decimal)	D_2 (Decimal)	H_1 (Hexadecimal) (Service model code)
000001 to 065535	D_1	FE
065536 to 131071	D_1 – 65536	FE
131072 to 196607	D_1 – 131072	FE
196608 to 262143	D_1 – 196608	FE
262144 to 327679	D_1 – 262144	FE
327680 to 393215	D_1 – 327680	FE
393216 to 458751	D_1 – 393216	FE
458752 to 524287	D_1 – 458752	FE
524288 to 589823	D_1 – 524288	FE
589824 to 655359	D_1 – 589824	FE
655360 to 720895	D_1 – 655360	FE
720896 to 786431	D_1 – 720896	FE
786432 to 851967	D_1 – 786432	FE
851968 to 917503	D_1 – 851968	FE
917504 to 983039	D_1 – 917504	FE
983040 to 999999	D_1 – 983040	FE

Table 6-3-2.

Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 6-3-3.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of "54 MHz/67.5 MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENT" is satisfied. And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note: The lens block (CD-537 board) must be connected when performing the adjustments.

Adjusting Procedure:

1. CAP FG duty adjustment
2. Switching position adjustment
3. Error rate check

1. Cap FG Duty Adjustment (VC-370 Board) RadarW

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur.

Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	16
Specified Value	Data of page: 3, address: 02 is "00". Data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1B	Set the data, and press PAUSE button.
4	3	02		Check that the data changes in the following order. "1B" → "2B" → "00"
5	3	03		Check that the data is "00". (Note2)
6	0	01	00	Set the data.

Note2: If the data is "01", adjustment has errors or the mechanism deck is defective.

2. Switching Position Adjustment (VC-370 Board) RadarW

To obtain normal playback waveform output during the playback mode, adjust the switching position.

Mode	VTR playback (PLAY/EDIT)
Signal	SW/OL reference tape (XH2-3)
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	Data of page: 3, address: 02 is "00". Data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	C	10	EE	Set the data, and press PAUSE button.
4	3	21		Check that the data is "02". (Note2)
5	3	01	0D	Set the data, and press PAUSE button.
6	3	02		Check that the data changes to "00".
7	3	03		Check that the data is "00". (Note3)
8	0	01	00	Set the data.

Note2: If the data of page: 3, address: 21 is "72", the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.
If the data of page: 3, address: 21 is "62", the tape end being played. After rewinding the tape, perform step 5 and higher.

Note3: If bit 0 of the data is "1", the EVEN channel is defective. If bit 1 is "1", the ODD channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to "6-4. SERVICE MODE", "4-3. 4. Bit value discrimination".) If bit 3 of the data is "1", the tape end being played, so rewind the tape and perform the adjustment again.

When the EVEN channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC2602) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC2301

When the ODD channel is defective

Data of page: C, address: 12	Contents of defect
EE	Writing into EEPROM (IC2602) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC2301

3. Error Rate Check RadarW

3-1. Preparations before adjustments

Mode	Camera recording (CAMERA-TAPE)
Subject	Arbitrary

Note1: The data of page: 1C, address: B3 to C8 must be initial value. (See Table 6-3-4.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	01	Set the data.
3	C	0D	C8	Set the data, and press PAUSE button.
4	0	10	00	Set the data.
5				Record the camera signal for two minutes.

3-2. Error Rate Check

Mode	Playback (PLAY/EDIT)
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	1C (Note2)
Adjustment Address	B3 to C8
Specified Value	Data of page: 3, address: 02 is “00”. Data of page: 3, address: 03 is “00”.

Note2: When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at “Preparations before adjustments”
2	0	01	01	Set the data.
3	0	10	00	Set the data.
4	3	1D		Check that the data is “20”.
5	3	01	40	Set the data, and press PAUSE button.
6	3	02		Check that the data changes from “40” to “00”.
7	3	03		Check that the data is “00”. (Note3)
8				Perform “Processing after Completing Adjustments”

Note3: If the data is other than “00”, Error rate is abnormal.
For the contents of the abnormality, see the following table.

Data of page: 3, address: 03	Contents of the abnormality
01	EVEN ch is abnormal.
02	ODD ch is abnormal.
03	EVEN ch and ODD ch are abnormal.

Note4: If Error rate is abnormal, Check the use tape, clean the tape running surface. And after inputting initial values to page 1C: address: B3 to C8, perform re-adjustment. (See Table 6-3-4.)

Initial Value of Page 1C: Address: B3 to C8

Address	Initial value	Address	Initial value	Address	Initial value
B3	00	BB	00	C3	80
B4	00	BC	00	C4	00
B5	00	BD	00	C5	00
B6	00	BE	00	C6	00
B7	00	BF	00	C7	00
B8	80	C0	00	C8	00
B9	00	C1	00		
BA	00	C2	00		

Table 6-3-4.

Note5: When writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page.
After writing the initial values, reset the data of page: 0, address: 10 to “00”.

3-3. Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	01	Set the data.
3	C	0D	00	Set the data, and press PAUSE button.
4	0	01	00	Set the data.
5	0	10	00	Set the data.

3-4. VIDEO SYSTEM ADJUSTMENTS

Note1: Before perform the video system adjustments, check that the specified value of "54MHz/67.5 MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENT" is satisfied.
And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note2: NTSC model : DCR-PC350
PAL model : DCR-PC350E

Note3: The lens block (CD-537 board) must be connected when performing the adjustments.

1. S VIDEO OUT Y Level Adjustment (VC-370 Board)

Mode	CAMERA–TAPE
Subject	Arbitrary
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 14mV

Note: The data of page: 0, address: 10 must be "00".

Switch setting:
DEMO MODE (PICT. APPLI menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	4C	94	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4	C	25		Change the data and set the Y signal level (A) to the specified value.
5	C	25		Press PAUSE button.
6	3	0C	00	Set the data, and press PAUSE button.
7	8	4C	96	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

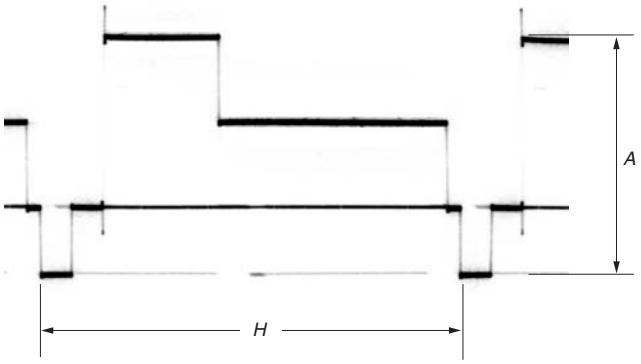


Fig. 6-3-5.

2. S VIDEO OUT Chroma Level Adjustment (VC-370 Board)

Mode	CAMERA-TAPE
Subject	Arbitrary
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level : A = 714 ± 14mV (NTSC) A = 700 ± 14mV (PAL) Cb level : B = 714 ± 14mV (NTSC) B = 700 ± 14mV (PAL) Burst level : C = 286 ± 6mV (NTSC) C = 300 ± 6mV (PAL)

Note: The data of page: 0, address: 10 must be "00".

Switch setting:
DEMO MODE (PICT. APPLI menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	4C	94	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4	C	26		Change the data and set the Cr signal level (A) to the specified value.
5	C	26		Press PAUSE button.
6	C	27		Change the data and set the Cb signal level (B) to the specified value.
7	C	27		Press PAUSE button.
8				Check that the burst signal level (C) is satisfied the specified value.
9	3	0C	00	Set the data, and press PAUSE button.
10	8	4C	96	Set the data, and press PAUSE button.
11	0	01	00	Set the data.

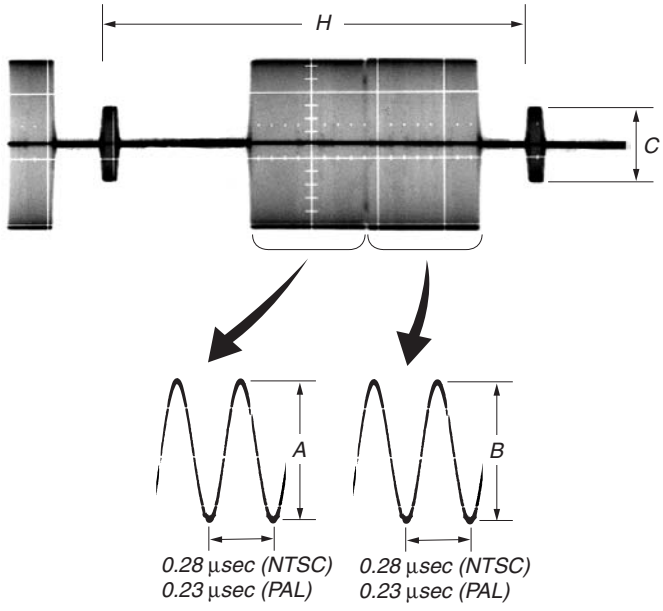


Fig. 6-3-6.

3. VIDEO OUT Y, Chroma Level Check (VC-370 Board)

Mode	CAMERA-TAPE
Subject	Arbitrary
Measurement Point	Video plug of A/V jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level : A = 286 ± 18mV (NTSC) A = 300 ± 18mV (PAL) Burst level : B = 286 ± 18mV (NTSC) B = 300 ± 18mV (PAL)

Note: The data of page: 0, address: 10 must be "00".

Switch setting:

DEMO MODE (PICT. APPLI menu) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	4C	94	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4				Check that the sync signal level (A) satisfies the specified value.
5				Check that the burst signal level (B) satisfies the specified value.
6	3	0C	00	Set the data, and press PAUSE button.
7	8	4C	96	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

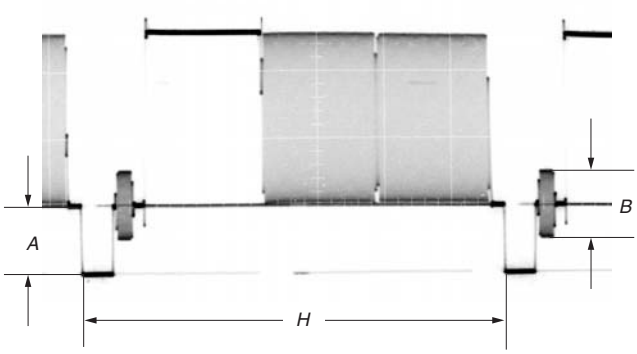


Fig. 6-3-7.

3-5. AUDIO SYSTEM ADJUSTMENTS

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 6-3-8.

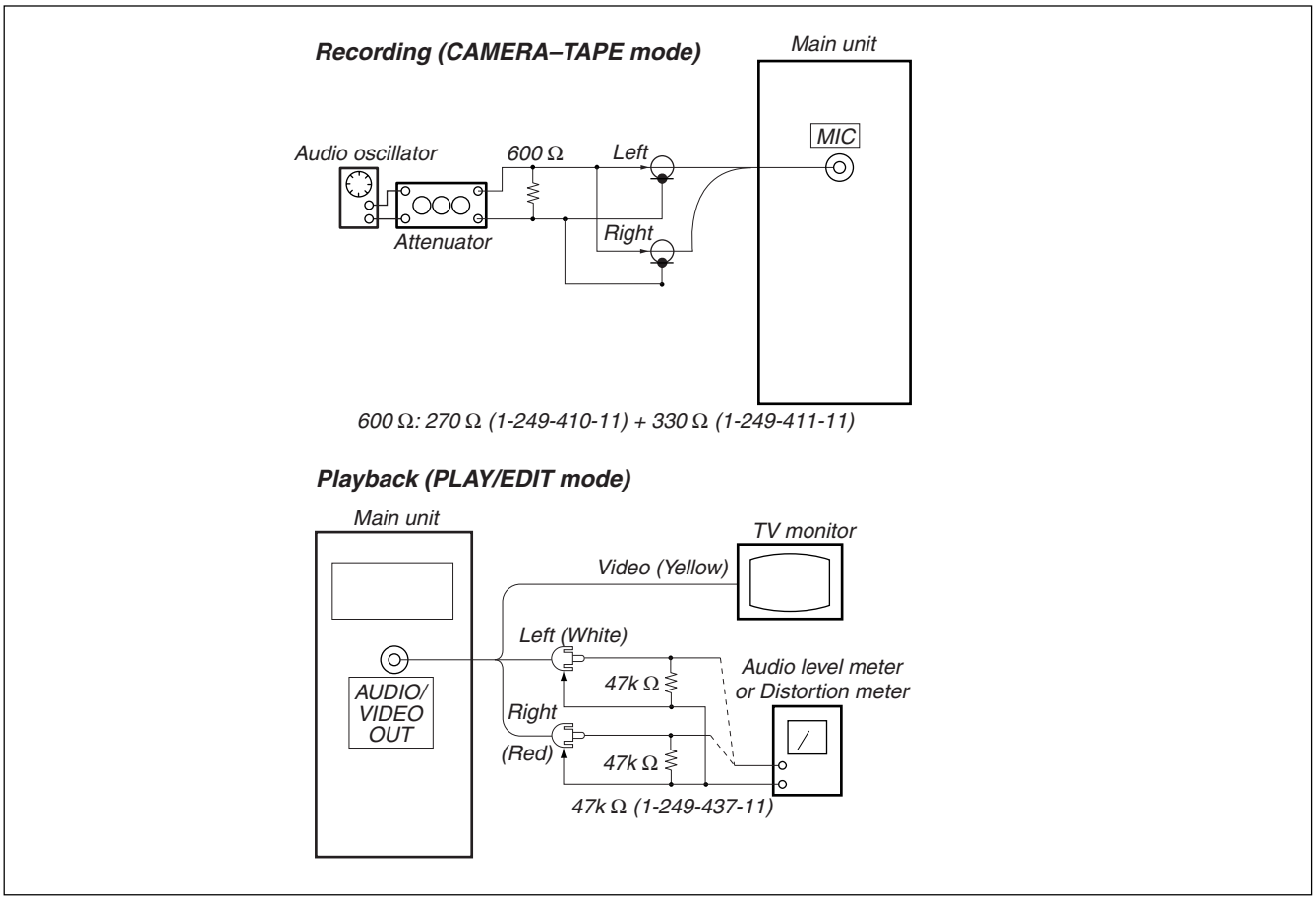


Fig. 6-3-8.

1. Playback Level Check

Mode	VTR playback
Signal	Alignment tape: For audio operation check (XH5-3 (NTSC)) (XH5-3P (PAL))
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:

1) Check that the playback signal level is the specified value.

2. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, –66 dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

3. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

4. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: Insert a shorting plug in the MIC jack
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

1) Insert a shorting plug in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the noise level is the specified value.

5. Overall Separation Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack <right> [left] (Connect the MIC jack <left> [right] to GND)
Measurement Point	Audio <left> [right] terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs (IHF-A filter ON)

< > : Left channel check
[ ] : Right channel check

Checking Method:

1) Input the 400Hz, –66dBs signal in the <right> [left] terminal of the MIC jack only.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the signal level of the audio <left> [right] terminal is the specified value.

6-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjustment remote commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 6-4-1.

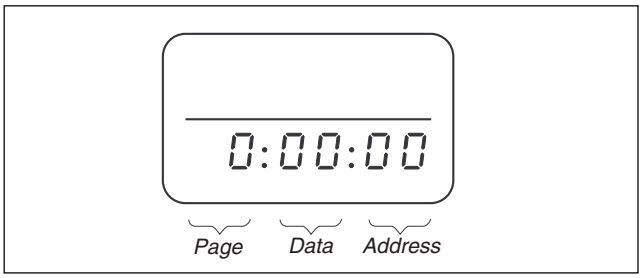


Fig. 6-4-1

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. Page to use for the adjustment are 22 pages of 0 to 3, 5 to 8, A to F, 14, 18, 19, 1A, 1B, 1C, 1E and 1F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (8, A, B, C, D, E, F, 14, 18, 19, 1A, 1B, 1C, 1E, 1F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

Note: When reading or writing the 14, 18, 19, 1A, 1B, 1C, 1E, 1F page data, select page: 0, address: 10, and set data: 01, then select 4, 8, 9, A, B, C, E or F page. The 14, 18, 19, 1A, 1B, 1C, 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

2. Precautions upon using the adjustment remote commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

	Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d) ②	E (E)	F (F)
	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
	4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
	5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
	6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
	7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
	8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
	9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
	A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①	B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
	C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
	D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
	E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
	F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 6-4-1.

4-3. SERVICE MODE

Note: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

1. Setting the Test Mode

Page A	Address 10

Data	Function
00	Normal
01	Forced camera power ON (CAMERA-TAPE mode)
02	Forced VTR power ON (PLAY/EDIT mode)
03	Forced camera + VTR power ON
05	Forced memory power ON (CAMERA-MEMORY mode)

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page A, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address (Camera section)

Page 19	Address 87 to 8A

Note: When reading or writing the 19 page data, select page: 0, address: 10, and set data: 01, then select 9 page. The 19 page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to “00”.

Address	Contents
87	EMG code when first error occurs
88	EMG code when second error occurs
89	EMG code when third error occurs
8A	EMG code when last error occurs

2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in 19 page, addresses 87 to 8A.. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error

Note: After completing adjustments, be sure to initialize the data of addresses 87 to 8A to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 10, and set data: 00.
3) Select page: 6, address: 01, set data: FD and press the PAUSE button.
4) Check that the data of page: 6, address: 02 is “01”.
5) Select page: 6, address: 01, set data: 00 and press the PAUSE button.
6) Select page: 0, address: 01, and set data: 00.

3. Emergence Memory Address (Mechanism section)

Page C	Address F4 to FF

Address	Contents
F4	EMG code when first error occurs
F6	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
F7	Lower: MSW code to be moved when first error occurs
F8	EMG code when second error occurs
FA	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
FB	Lower: MSW code to be moved when second error occurs
FC	EMG code when last error occurs
FE	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
FF	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB). Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

Note: After completing adjustments, be sure to initialize the data of addresses F4 to FF to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 37, and press the PAUSE button.
3) Check that the data of page:3, address:02 is “00”.
4) Select page: 0, address: 01, and set data: 00.

3-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses F4, F8 and FC. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

3-2. MSW Code

MSW when errors occur:

Information on MSW (mode SW) when errors occur

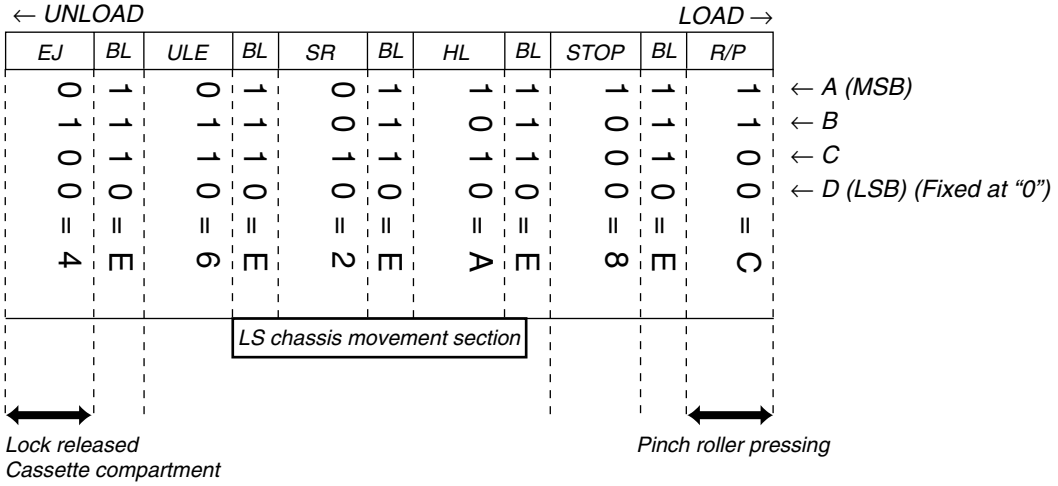
MSW when movement starts:

Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)

MSW of target of movement:

Information on target MSW of movement when the mechanism position is moved

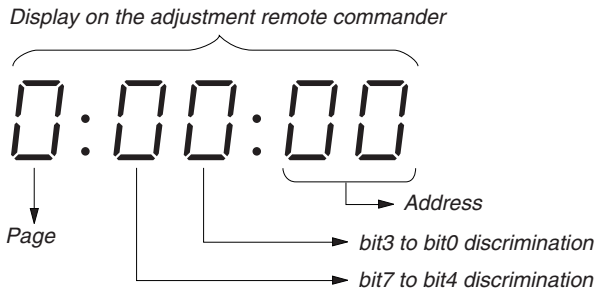
Mechanical Position



Position	Code	Contents
EJ	4	Position at which the cassette component lock is released, at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	E	BLANK code, at the boundary between codes.
ULE	6	EJECT completion position. when the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SR	2	Position at which it is possible to release the S ratchet.
HL	A	Guide loading are performed here.
STOP	8	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
R/P	C	PB, REC, CUE, REVIEW, PAUSE, FF, REW positions. When pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
NULL	0	Code not existing in the MD. Default value.
	F	Status before finding any mechanism position.

4. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

5. Switch check (1)

Page 2	Address 81

Note: The data of page: 0, address: 10 must be “00”.

Bit	Function	When bit value=1	When bit value=0
0	POWER SW (XPOWER SW) (PS7450 block S052)	ON	OFF
1	MODE SW (XMODE SW) (PS7450 block S053)	ON	OFF
3	EJECT SW (XEJECT SW) (PS7450 block S051)	ON	OFF
4	CC DOWN SW (Mechanism chassis)	ON (DOWN)	OFF (UP)
5	DISPLAY/BATTERY INFO SW (XBATT INFO SW) (VP-060 board S8601)	ON	OFF

Using method:

1) Select page: 2, address: 81.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

6. Switch check (2)

Page 7	Address 4F

Note: The data of page: 0, address: 10 must be “00”.

Bit	Function	When bit value=1	When bit value=0
0	REC PROOF SW (Mechanism chassis)	SAVE	REC

Using method:

1) Select page: 7, address: 4F.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

7. Switch check (3)

Page 7	Address F3

Note: The data of page: 0, address: 10 must be “00”.

Bit	Function	When bit value=1	When bit value=0
1	Handycam station connecotor (CR-048 board CN8501)	Used	Not used
2	S VIDEO jack (CR-048 board J8500)	Used	Not used
3	A/V jack (FP-995 flexile J950)	Used	Not used

Using method:

1) Select page: 7, address: F3.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

8. Switch check (4)

Page 7	Address F4

Note: The data of page: 0, address: 10 must be “00”.

Bit	Function	When bit value=1	When bit value=0
2	MIC jack (MS-234 board J800)	Used	Not used
4	A/V jack (Handycam station)	Used	Not used
6	S VIDEO jack (Handycam station)	Used	Not used

Using method:

1) Select page: 7, address: F4.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

9. Switch check (5)

Page 7	Address 60 to 69

Note: The data of page: 0, address: 10 must be “00”.

Using method:

1) Select page: 7, address: 60 to 69.
2) By discriminating the display data, the pressed key can be discriminated.
   Example: If the data of address: 60 is “00” and the data of address: 61 is “03”, the data of KEY AD0 signal is “0003”. It can be discriminated that the START/STOP button is pressed.

Address	Data (4 digits)						
	0000 (0000 to 0033)	006C (0034 to 009B)	00D4 (009C to 010F)	014C (0110 to 019B)	01DC (019C to 022B)	0280 (022C to 02DB)	03FC (039C to 03FF)
60 (Upper digits) 61 (Lower digits) (KEY AD0) (IC2702 ⑬⑨)	START/STOP (PS7450 block) (S054)						No key input
62 (Upper digits) 63 (Lower digits) (KEY AD1) (IC2702 ⑭⓪)	START/STOP (SB7450 block) (S501)		ZOOM WIDE (SB7450 block) (S503)		ZOOM TELE (SB7450 block) (S502)		No key input
64 (Upper digits) 65 (Lower digits) (KEY AD2) (IC2702 ⑭①)	PHOTO (PHOTO REC) (FK7450 block) (S025)	PHOTO (PHOTO FREEZE) (FK7450 block) (S024)	FOCUS (FK7450 block) (S021)	BACK LIGHT (FK7450 block) (S020)	FLASH (FK7450 block) (S022)	NIGHT SHOT ON (FK7450 block) (S023)	NIGHT SHOT OFF (FK7450 block) (S023)
66 (Upper digits) 67 (Lower digits) (KEY AD3) (IC2702 ⑭②)	EASY (PS7450 block) (S055)	LCD BACK LIGHT (VP-060 board) (S8602)	PANEL CLOSE (FP-993 flexible) (S9300)				PANEL OPEN (FP-993 flexible) (S9300)
68 (Upper digits) 69 (Lower digits) (KEY AD4) (IC2702 ⑭③)	PANEL REVERSE (FP-994 flexible) (S9400)						PANEL NORMAL (FP-994 flexible) (S9400)

10. LED check

Page 7	Address 00, 01, 04

Note: The data of page: 0, address: 10 must be “00”.

Using method:

1) Select page: 7, address: 01, and set data: 90.
2) Select page: 7, address: 04, and set data: 01.
3) Select page: 7, address: 00, set data: 01 and press the PAUSE button.
4) Check that the following LEDs are lit.
   TALLY, CHARGE, CAMERA-TAPE, CAMERA-MEMORY, PLAY/EDIT, MEMORY STICK, FLASH, EASY OPERATION
5) Select page: 7, address: 01, and set data: 90.
6) Select page: 7, address: 04, and set data: 00.
7) Select page: 7, address: 00, set data: 01 and press the PAUSE button.
8) Select page: 7, address: 00, and set data: 00.
9) Select page: 7, address: 01, and set data: 00.

11. Record of Use check (1)

Page 7	Address A7 to A9

Note1: When replacing the drum assembly or the mechanism deck, initialize the data of address: A7 to A9.
Note2: This data will be kept even if the lithium battery (MS-234 board BT800) is removed.
Note3: The data of page: 0, address: 10 must be “00”.

Address	Function		Remarks
A7	Drum rotation	Hour (H)	100000th place digit and 10000th place digit of counted time
A8	counted time	Hour (M)	1000th place digit and 100th place digit of counted time
A9	(BCD code)	Hour (L)	10th place digit and 1st place digit of counted time

Using method:

1) The record of use data is displayed at addresses: A7 to A9.

Initializing method:

1) Select page: 7, address: A7, set data: 00 and press the PAUSE button.
2) Select page: 7, address: A8, set data: 00 and press the PAUSE button.
3) Select page: 7, address: A9, set data: 00 and press the PAUSE button.

12. Record of Use check (2)

Page 7	Address C8 to CD

Note1: This data will be kept even if the lithium battery (MS-234 board BT800) is removed.
Note2: The data of page: 0, address: 10 must be “00”.

Address	Function		Remarks
C8	User initial power	Year	After setting the clock, set the date of power on next
C9	on date	Month	
CA	(BCD code)	Day	
CB	Final condensation	Year	
CC	occurrence data	Month	
CD	(BCD code)	Day	

Using method:

1) The record of use data is displayed at addresses: C8 to CD.

13. Record of Self-diagnosis check

Page 7	Address B0 to C6

Note1: This data will be kept even if the lithium battery (MS-234 board BT800) is removed.
Note2: The data of page: 0, address: 10 must be “00”.

Address	Self-diagnosis code
B0	“Repaired by” code (Occurred 1st time) *1
B1	“Block function” code (Occurred 1st time)
B2	“Detailed” code (Occurred 1st time)
B4	“Repaired by” code (Occurred 2nd time) *1
B5	“Block function” code (Occurred 2nd time)
B6	“Detailed” code (Occurred 2nd time)
B8	“Repaired by” code (Occurred 3rd time) *1
B9	“Block function” code (Occurred 3rd time)
BA	“Detailed” code (Occurred 3rd time)
BC	“Repaired by” code (Occurred 4th time) *1
BD	“Block function” code (Occurred 4th time)
BE	“Detailed” code (Occurred 4th time)
C0	“Repaired by” code (Occurred 5th time) *1
C1	“Block function” code (Occurred 5th time)
C2	“Detailed” code (Occurred 5th time)
C4	“Repaired by” code (Occurred the last time) *1
C5	“Block function” code (Occurred the last time)
C6	“Detailed” code (Occurred the last time)

*1: “01” → “C”, “03” → “E”

Using method:
1) The past self-diagnosis codes are displayed at addresses: B0 to C6. Refer to “SELF-DIAGNOSIS CODE TABLE” for detail of the self-diagnosis code.

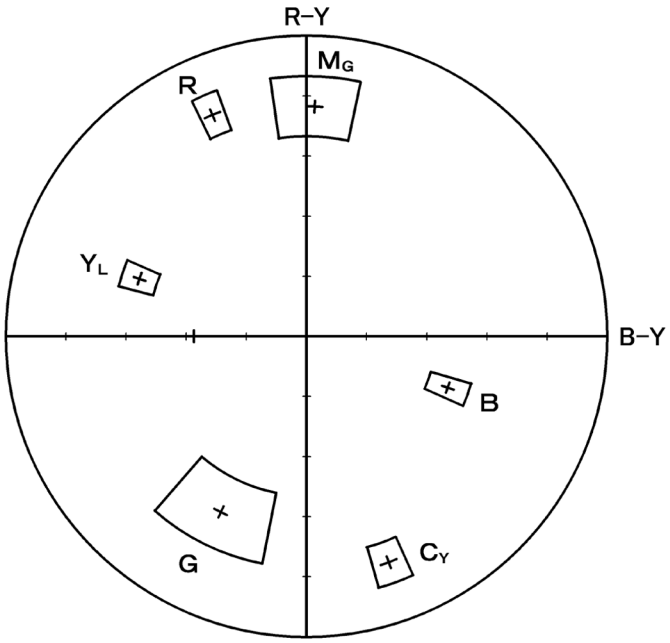
Initializing method:
1) Select page: 7, address: 01, and set data: C0.
2) Select page: 7, address: 00, set data: 01 and press the PAUSE button.
3) Check that the data of page: 7, address: B0 to C7 are “00”.
4) Select page: 7, address: 00, and set data: 00.
5) Select page: 7, address: 01, and set data: 00.

Note3: When the flash error code (E: 91: ✻✻) is displayed. After repair, clear the error flag in the following method.
1) Select page: 7, address: 01, and set data: 75.
2) Select page: 7, address: 00, set data: 01 and press the PAUSE button.
3) Check that the data of page: 7, address: 02 is “01”.

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the info LITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	2	0	0	0	Data on A page or D page are rewriten.	Make data A page and D page correct value.
E	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus MR sensor (Pin ⑬, ⑮ of CN1301 of VC-370 board) when focusing is performed when the focus ring is rotated in the focus manual mode, and the focus motor drive circuit (IC1301 of VC-370 board) when the focusing is not performed.
E	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom MR sensor (Pin ⑯, ⑱ of CN1301 of VC-370 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC1301 of VC-370 board) when zooming is not performed.
E	6	2	0	0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE2501 of SE-151 board) peripheral circuits.
E	6	2	0	1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE2500 of SE-151 board) peripheral circuits.
E	9	1	0	1	Abnormality when the power supply capacitor of the flash unit is being charged.	Checking or replacement of the flash unit.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

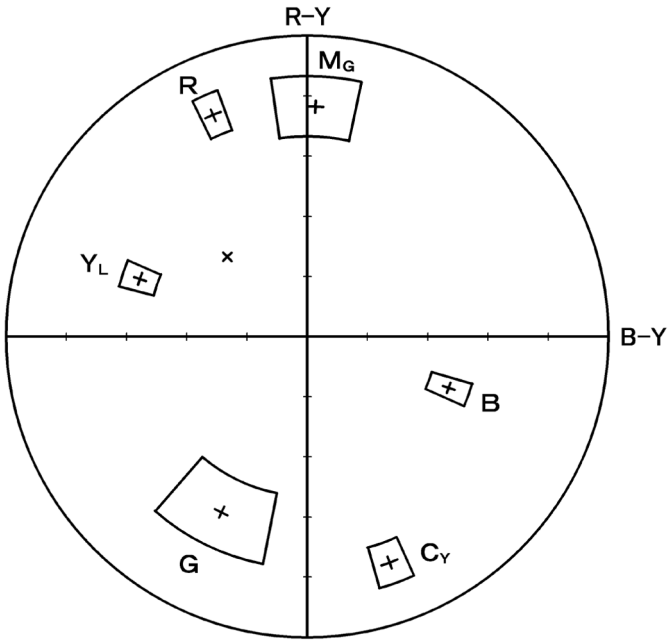
For NTSC model



DCR-PC350

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

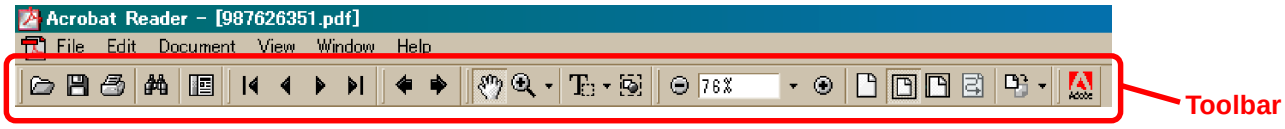
For PAL model



DCR-PC350E

ENGLISH JAPANESE

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

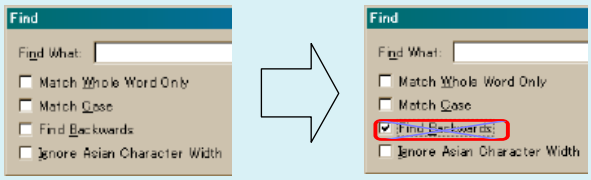
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

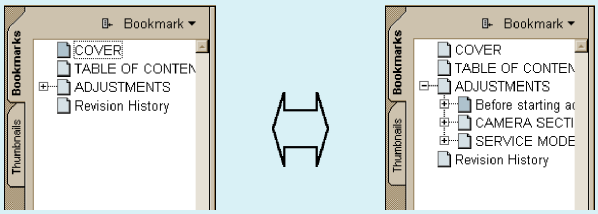
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

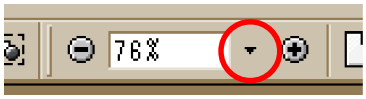
Moving with bookmark:
Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



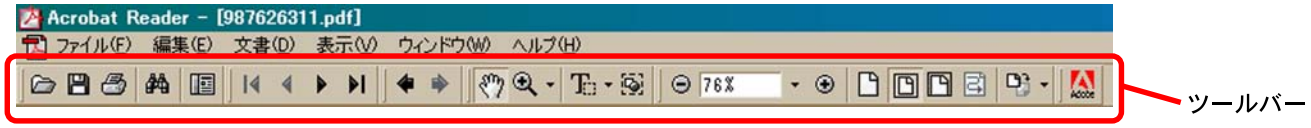
"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

ENGLISH JAPANESE

【Adobe Acrobat Reader Ver 5.0(for Windows)ツールバー内にある主なボタンの機能説明】



文章を印刷する

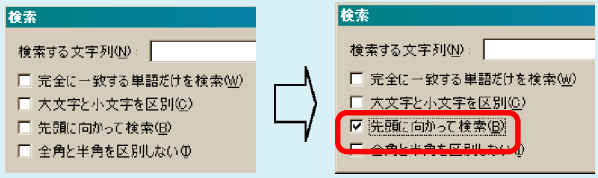
1. 印刷ボタンをクリックする。
2. プリンター、印刷範囲、印刷部数、および他のオプションを指定して「OK」をクリックする。

印刷の応用：
ページ内で印刷したい範囲を設定するには、グラフィック選択ツールを選択し、ページ上をドラッグして印刷したい範囲を囲んでから印刷ボタンをクリックする。

文章内を検索する

1. 検索ボタンをクリックする。
2. 検索したい文字列をテキストボックスに入力して「検索」をクリックする。(必要に応じて検索オプションを指定する)

サービスマニュアルへの応用：
現在のページから前ページに向かって検索する場合は「先頭に向かって検索」のチェックボックスを選択してから「検索」をクリックする。



3. 検索ダイアログボックスをもう一度開き、「次を検索」をクリックすると次に出てくる一致文字列を検索することができる。(前回入力した文字列が、テキストボックスにそのまま表示されている)

サービスマニュアルへの応用：
文章内にある図面ページ(ブロックダイヤグラム、回路図、プリント図)および部品表ページなどは、この検索機能を使って部品検索することができる。例えば、ブロックダイヤグラム上でICのRef. No.を検索し、「次を検索」を続けることによって回路図、プリント図上にあるICのRef. No.へ次々と移動する。
注意：発行年月日によって検索できない場合もあります。

ページを切り換える

- 最初のページに移動する場合、をクリックする。
- 最後のページに移動する場合、をクリックする。
- 前のページに移動する場合、をクリックする。
- 次のページに移動する場合、をクリックする。

一度表示した画面へ逆戻りする

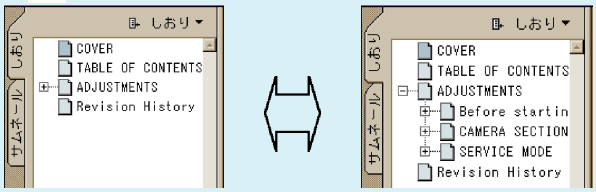
- 前の画面(操作)へ1つずつ逆戻りする場合、をクリックする。
- 戻した画面(操作)を1つずつ前に進める場合、をクリックする。

サービスマニュアルへの応用：
回路図とプリント図を行き来できるので電圧チェックに便利です。

リンクを使用して移動する

1. 手のひらツール、ズームツール、テキスト選択ツール、グラフィック選択ツールのいずれかを選択する。
2. 文章内のリンクのある場所(表紙および章目次ページのボタン、外し方のフローページ、図面ページでは文字が青色になっているところなど)にポインタを置くと、ポインタが人差し指の形「」に変わる。
3. そのままリンクをクリックする。(リンク先へ移動する)

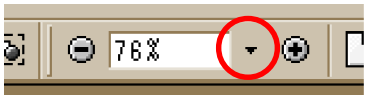
しおりを利用して移動する：
しおりパレット上の項目(テキスト)をクリックするとリンク先へ移動することができる。また、「」をクリックすると隠れている項目を表示することができる。
(「」をクリックすると元に戻る)



画面の表示を拡大、縮小または回転させる

「拡大/ 縮小」

- 倍率ボックスの三角矢印ボタンをクリックし、表示倍率を選択する。または、をクリックしても使えます。



「回転」

- 回転ツールをクリックすると、ページが90度ずつ回転する。

サービスマニュアルへの応用：
見ているプリント図をセットと同じ向きに変えられます。

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.07	Official Release	—	—

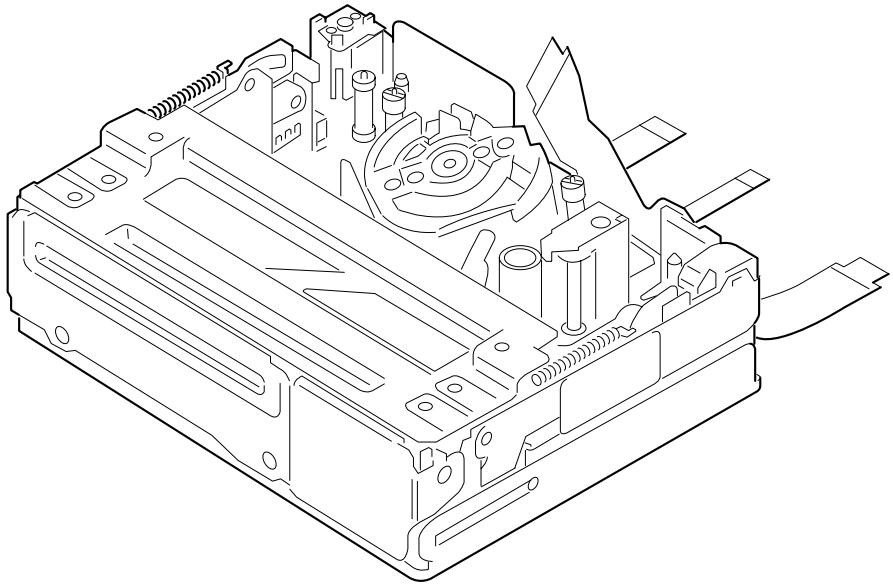
DV MECHANICAL ADJUSTMENT MANUAL VII

Ver 1.0 2003. 01

Z MECHANISM

Mini DV Digital Video Cassette

Please use this manual with the service manual of the respective models.



The capstan motor and the drum base block assy of this mechanism require very high precision work to install them in the mechanism. Therefore, the capstan motor and the drum base block assy are not supplied as the repair part independently. They are supplied as MD (Z100) SUB block assy.

Digital MECHANISM DECK

SONY

TABLE OF CONTENTS

1. Preparations for Check, Adjustment and Replacement of Mechanism Block

1-1. Cassette Compartment Assy, Damper Assy ····· 3

2. Periodic Inspection and Maintenance

2-1. Rotary Drum Cleaning ····· 4
2-2. Tape Path System Cleaning (Refer to Fig. 2-1.) ····· 4
2-3. Periodic Inspection List ····· 5
2-4. Service Jigs and Tools ····· 6
2-5. Mode Selector II Operating Procedure ····· 8
2-5-1. Introduction ····· 8
2-5-2. Operation ····· 8
2-5-3. Mechanism Status (Position) Transition Table Using Mode Selector II ····· 11
2-5-4. Battery Alarm Indication ····· 11

3. Check, Adjustment and Replacement of Mechanical Parts

3-1. Flowchart of Replacement of Mechanical Parts ····· 12
3-2. Drum ····· 13
3-3. Cassette Compartment Assy ····· 14
3-4. TG7 Support ····· 15
3-5. Motor Holder Block Assy and L Motor Block Assy ····· 16
3-6. MIC Terminal (MIC902) ····· 17
3-7. LED (D901) ····· 18
3-8. Retainer Plate ····· 19
3-9. T Reel Table Assy ····· 20
3-10. Brake (S) and Release Rack (S) ····· 21
3-11. Band Adjuster, S Reel Table Assy and TG2 Arm Block Assy ····· 22
3-12. ULE Brake Assy ····· 23
3-13. Cassette Positioning (S) ····· 24
3-14. TG7 Arm Block Assy and Pinch Arm Assy ····· 25
3-15. TG7 ····· 26
3-16. Gooseneck Gear Assy ····· 27
3-17. LS Guide Retainer and LS Cam Plate ····· 28
3-18. LS Chassis Block Assy and Mechanical Chassis Block Assy ····· 29
3-19. Brake (T) Block Assy ····· 30
3-20. END Sensor (Q901) ····· 31
3-21. TOP Sensor (Q902) ····· 32
3-22. C-IN Switch (S903), S Reel Sensor (H901) and T Reel Sensor (H902) ····· 33
3-23. Guide Rail ····· 34
3-24. Conversion Gear ····· 35
3-25. Coaster (S) Block Assy and Coaster (T) Block Assy ····· 36
3-26. TG5 Roller Assy and GL Gear (T) ····· 37
3-27. TG2 Cam Plate Assy ····· 38
3-28. LS Arm Assy ····· 39
3-29. M Slider Assy (1) ····· 40
3-30. M Slider Assy (2) ····· 41
3-31. EJ Arm ····· 42
3-32. Cam Gear and GL Driving ····· 43
3-33. Rotary Encoder (S902) ····· 44
3-34. FP-228 Flexible Board (DEW SENSOR) and FP-467 Flexible Board ····· 45

4. Adjustment

4-1. FWD Position Adjustment ····· 47
4-2. Reel Torque Check ····· 47
4-3. LS Cam Plate Position Adjustment ····· 48
4-4. Tape Path Adjustment ····· 49

5. Exploded Views

Overall Mechanism Deck Section (Z100) ····· 53
LS Chassis Block Assembly ····· 54
Mechanical Chassis Block Assembly ····· 55

6. Schematic Diagrams ····· 56

7. Printed Wiring Boards ····· 57

1. Preparations for Check, Adjustment and Replacement of Mechanism Block

- Refer to the "DISASSEMBLY" section of the SERVICE MANUAL of the respective models for details of removing cabinets and printed wiring boards.
- When making any adjustment to a mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section "2-5. Mode Selector II" for details on how to enter the mode shown in a rectangle [____] mode in subsequent paragraphs of this manual.

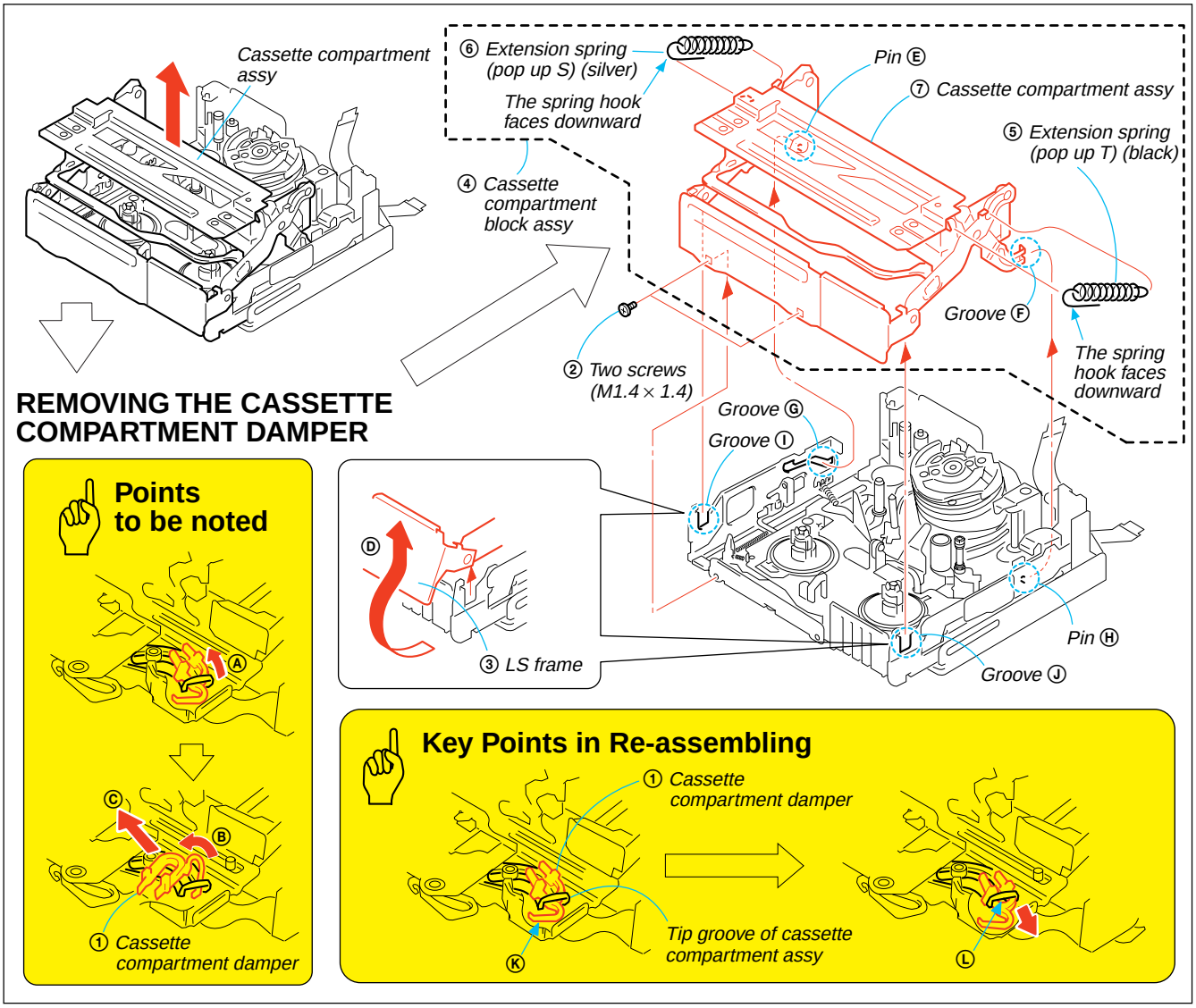
1-1. Cassette Compartment Assy, Damper Assy

1. Removal procedure

1) Set the [EJ] mode.
2) Press the cassette compartment down halfway. Pull the cassette compartment damper ① in the direction of the arrow Ⓐ. Then rotate it in the Ⓑ direction, and remove it in the direction of Ⓒ.
3) Remove the two screws (special head screw M1.4 × 1.4) ②.
4) Remove the LS chassis block assy ③ in the direction of the arrow Ⓓ.
5) Remove the pin Ⓔ and groove Ⓕ of the cassette compartment assy ④ from the LS chassis groove Ⓖ and pin Ⓗ. Then remove the cassette compartment block assy ④.
6) Remove the tension spring (POP UP T) (black) ⑤.
7) Remove the tension spring (POP UP S) (silver) ⑥.Then remove the cassette compartment assy ⑦.

2. Attachment procedure

1) Set the [ULE] mode.
2) Install the tension spring (cassette compartment S) (POP UP S) (silver) ⑥ in to the cassette compartment assy ⑦. (The spring should be hooked on the front stay with the spring end facing upward.)
3) Install the tension spring (cassette compartment T) (POP UP T) (black) ⑤ in to the cassette compartment assy ⑦. (The spring should be hooked on the front stay with the spring end facing upward.)
4) Install the pin Ⓔ and groove Ⓕ of the cassette compartment assy ④ into the LS chassis groove Ⓖ and pin Ⓗ.
5) In the status that the LS block assy ③ is kept open, insert it into the grooves Ⓘ and Ⓙ of the LS chassis block assy.
6) Close the LS chassis block assy ③ in the direction opposite to the arrow Ⓓ, and install it with the two screws (special head screw M1.4 × 1.4) ②.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
7) The cassette compartment down halfway. Pass the Ⓚ portion of the cassette compartment damper ① through the groove at the tip of the cassette compartment. Then pull the Ⓛ portion and fix it using tweezers or something.



2. Periodic Inspection and Maintenance

- Be sure to perform the following maintenance and inspection so that the machine delivers its full performance and functions, and to protect the machine and tape. Also, perform the following maintenance items after completing the repair work, regardless of the number of hours the machine has been operated by the user.

2-1. Rotary Drum Cleaning

1) Press a wiping cloth (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counter-clockwise direction to clean the rotary drum.

Caution: Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

2-2. Tape Path System Cleaning (Refer to Fig. 2-1.)

1) Set the EJECT state. Clean the tape running path (TG-1, -2, -3, -4, -5, -6 and -7, pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. J-3) moistened with cleaning fluid.

Note 1: Be careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. J-3).
Note 2: Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.
Note 3: When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

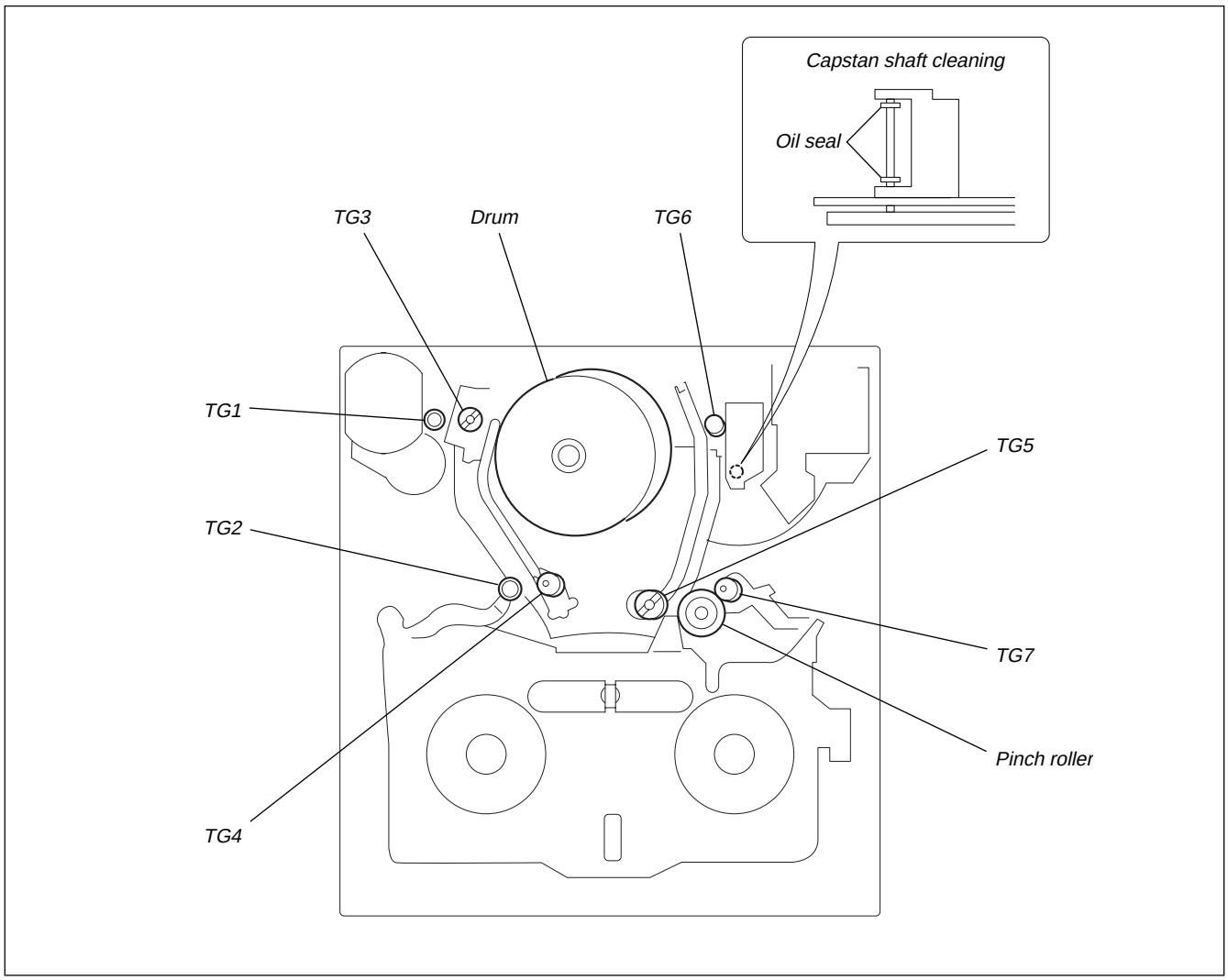


Fig. 2-1

2-3. Periodic Inspection List

Maintenance and inspection item		Operating hours (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Tape running surface cleaning	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
	Rotary drum cleaning and degaussing	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
Drive mechanism	Capstan bearing	—	☆	—	☆	—	☆	—	☆	—	☆	
Drive mechanism	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
Performance check	Back-tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	FWD/RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○: Cleaning, ☆: Check

Note 1: When the machine is overhauled, replace the parts referring to the above list.

Note 2: Grease

- Be sure to use the specified grease only. (If grease of different viscosity is used, it can cause various troubles.)
- The grease must not contain any dust or other matter. (otherwise it can cause various trouble.)
- Observe the noted amount of grease. (otherwise the oozed grease can cause troubles.)
- Suncall FG-87HSR

2-4. Service Jigs and Tools

Ref. No.	Name	Part code	Jig inscription	Used for
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Wiping cloth	7-741-900-53		
J-3	Super-fine applicator (made by Nippon Applicator (P752D))	—		
J-4	Mirror (small oval type)	J-6080-840-A	GD-2038	Tape path
J-5	Tracking tape (XH2-1) (NTSC, PAL)	8-967-997-01		Tape path
J-6	Mini DV torque cassette	J-6082-360-A		
J-7	FWD/BACK T adjustment screwdriver	J-6082-187-A		For TG2 FWD position adjustment
J-8	Torque screwdriver	J-9049-330-A		
J-9	Tape path screwdriver	J-6082-026-A		For tape path adjustment
J-10	Adjustment remote commander (RM-95 upgraded)	J-6082-053-B		
J-11	Mode Selector II	J-6082-282-B		General adjustment (ROM version 1.8)
J-12	Mode Selector II conversion board (Z)	J-6082-493-A		
J-13	Mode Selector II ROM (supporting Z mechanism) * Note 1	J-6082-314-G		ROM for Mode Selector II

Other required equipment: Oscilloscope

Note 1: This is the ROM used for upgrading the version of Mode Selector II to enable it to be used for the Z mechanism.

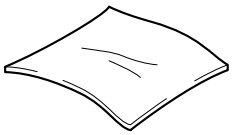
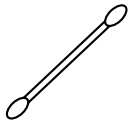
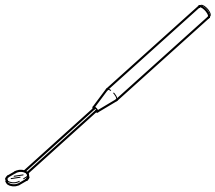
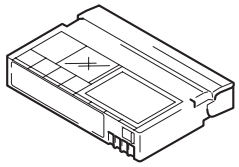
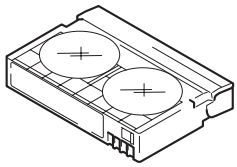
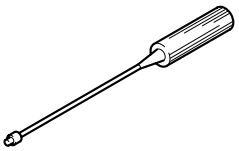
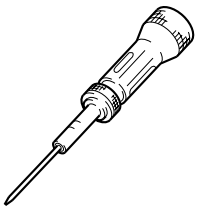
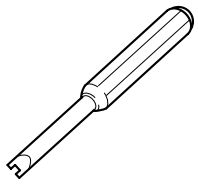
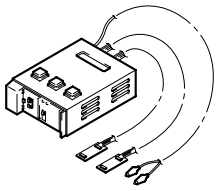
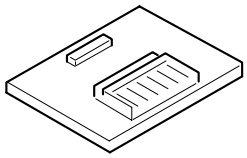
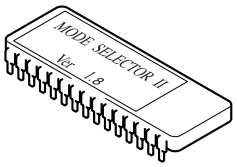
J-1	***J-2*** 	***J-3*** 	***J-4*** 	***J-5*** 
J-6 	***J-7*** 	***J-8*** 	***J-9*** 	***J-10***
J-11 	***J-12*** 	***J-13*** 		

Fig. 2-2

2-5. Mode Selector II Operating Procedure

2-5-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the "NG" indication appears and the mechanism stops moving.

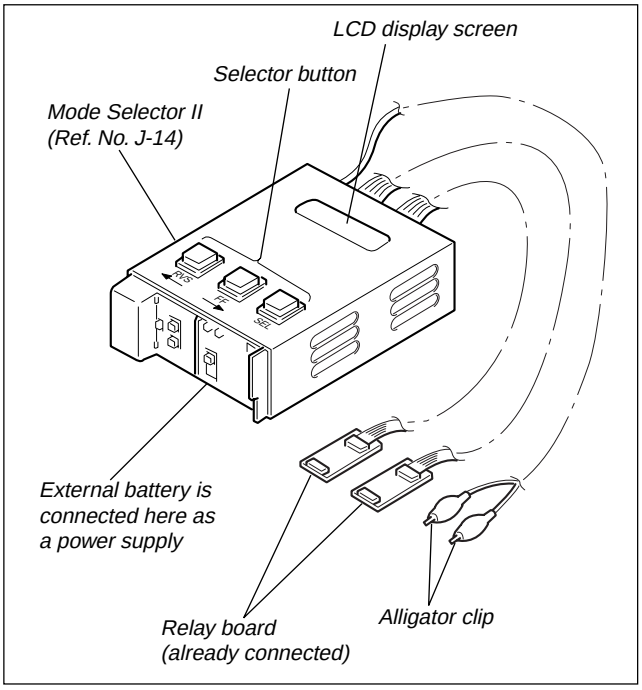


Fig. 2-3

Mode Selector II (J-6082-282-B) connection diagram

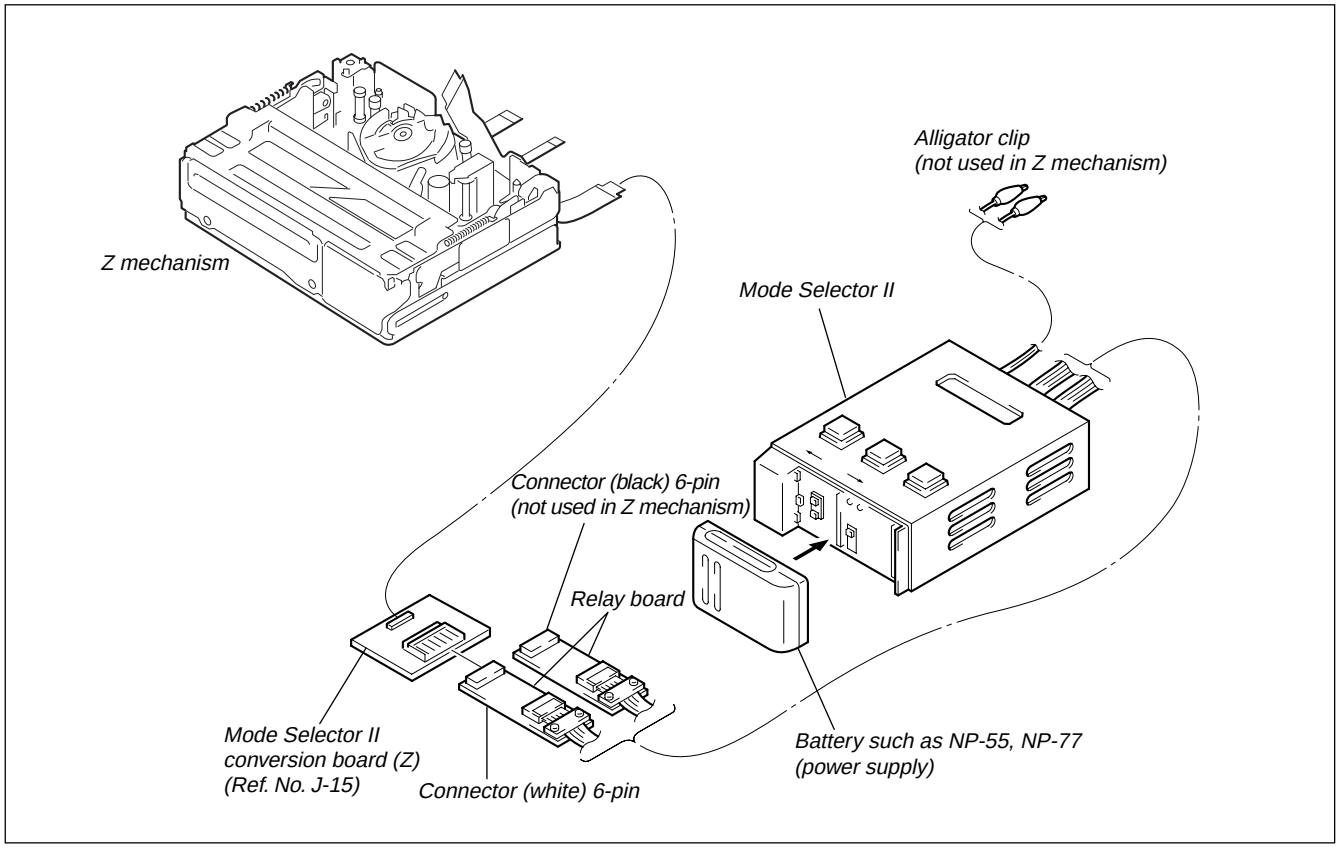
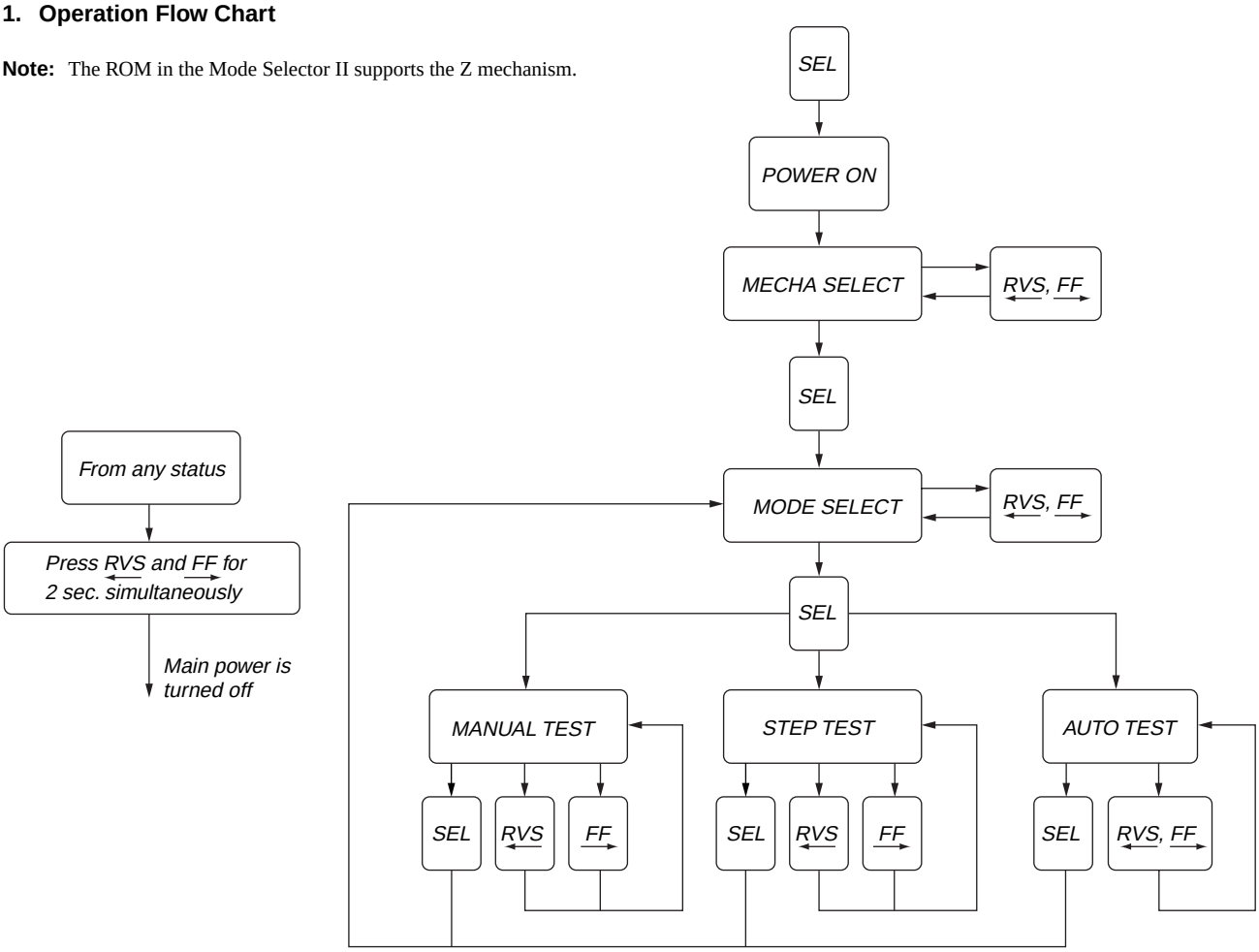


Fig. 2-4

2-5-2. Operation

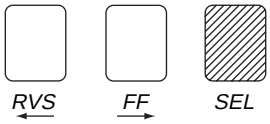
1. Operation Flow Chart

Note: The ROM in the Mode Selector II supports the Z mechanism.



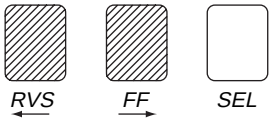
2. Mode Selector II Power On

Turn on the main power of the Mode Selector II as follows.
Press the SEL button.



3. Mode Selector II Power Off

Turn off the main power of the Mode Selector II as follows.
Press the RVS and FF buttons at the same time for 2 seconds or longer while the power is on.



4. Mecha Select

When the main power is turned on, the MECHA SELECT display appears on the LCD screen. Select the desired mechanism name using the RVS and FF buttons. Selection is complete when the SEL button is pressed. (Fig. A shows the Z mechanism.)

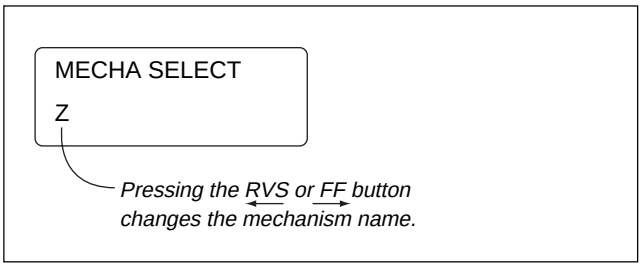


Fig. a

5. Test Type Select

Using the RVS and FF buttons, select a desired test type from the three types of "MANUAL", "STEP" and "AUTO". Selection is complete when the SEL button is pressed.

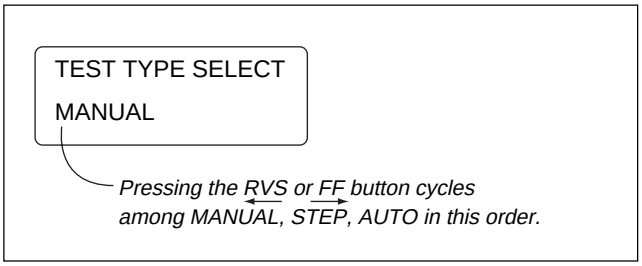


Fig. b

6. Manual Test

In this test, the motor of the mechanism deck is turned on only during the period while the RVS or FF button is pressed manually.

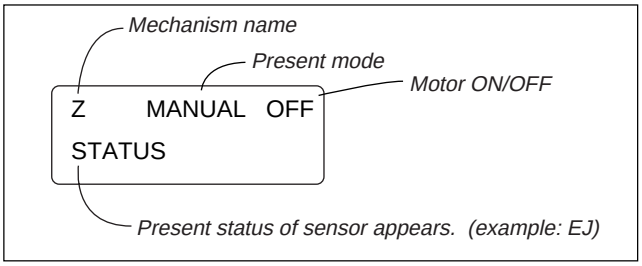


Fig. c

7. Step Test

In this test, the direction of motor movement is determined by the RVS and FF buttons. The motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information.

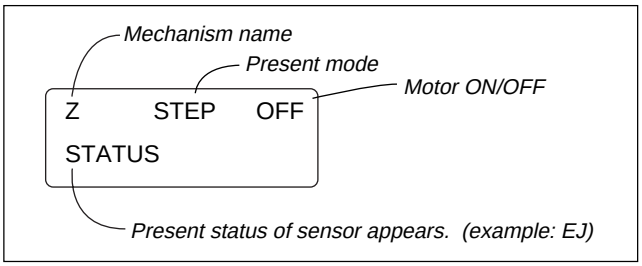


Fig. d

8. Auto Test

In this test, the mechanism deck is tested as to whether it performs a series of movements correctly in accordance with the operation sequence that is memorized earlier for each type of deck, by checking the output signals from sensors with the stored memory. Turning on the RVS or FF button performs the same operation.

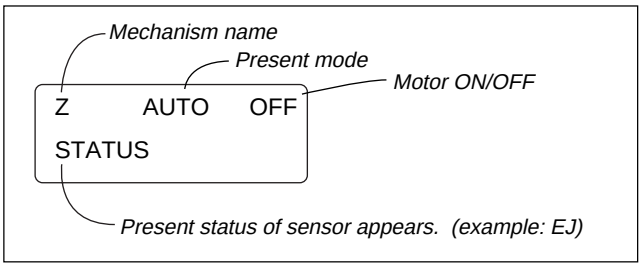


Fig. e

2-5-3. Mechanism Status (Position) Transition Table Using Mode Selector II

After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the RVS or FF button. (The selected status appears on STATUS.)
EJ⟷ULE⟷SR⟷HL⟷STOP⟷R/P

MD name / Code				Z Mechanism
A	B	C		
0	1	0	1	EJ
1	1	0	2	ULE
1	0	0	3	SR
1	0	1	4	HL
0	0	1	5	STOP
0	1	1	6	R/P

2-5-4. Battery Alarm Indication

When the level of the battery used to supply power to this system decreases, this display appears asynchronously. When this happens, all operations are disabled and the battery must be replaced.

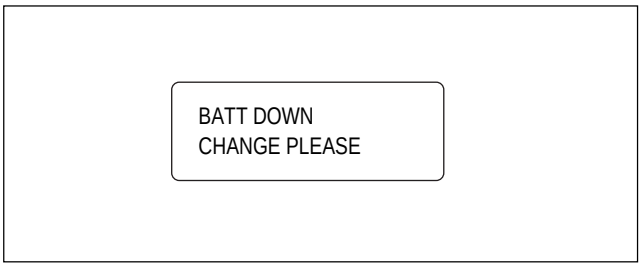
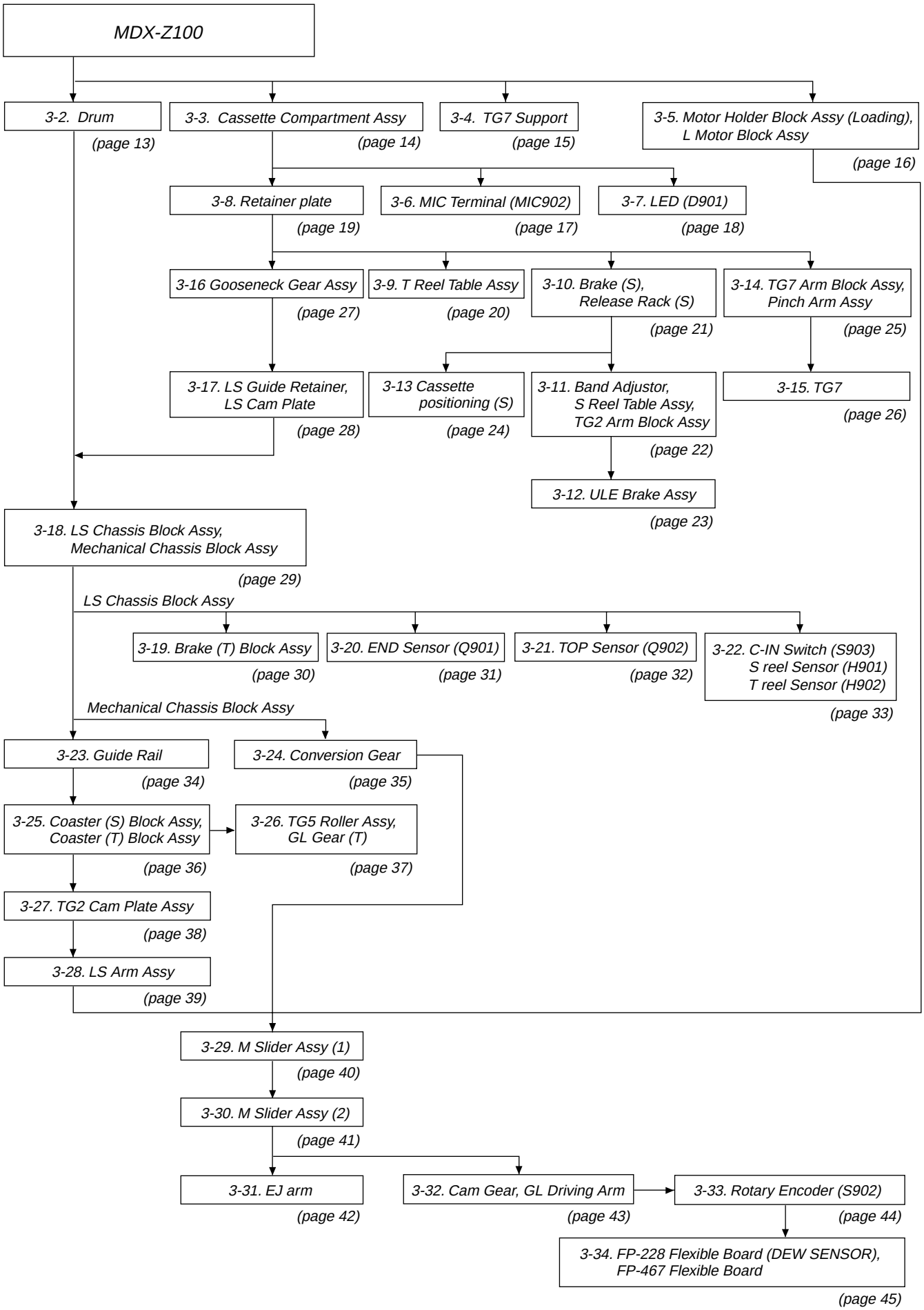


Fig. f

3. Check, Adjustment and Replacement of Mechanical Parts

3-1. Flowchart of Replacement of Mechanical Parts



3-2. Drum

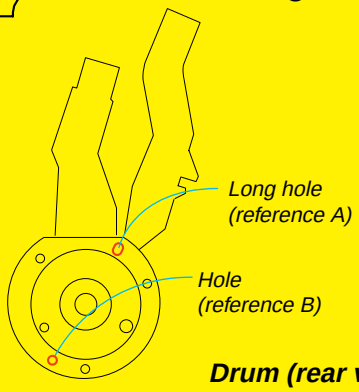
1. Removal procedure

1) Remove head drum flexible board Ⓒ from the notch of the mechanical chassis block assy.
2) Remove the drum fixing screw (M1.4 × 1.3) ① and remove the drum assy ②.

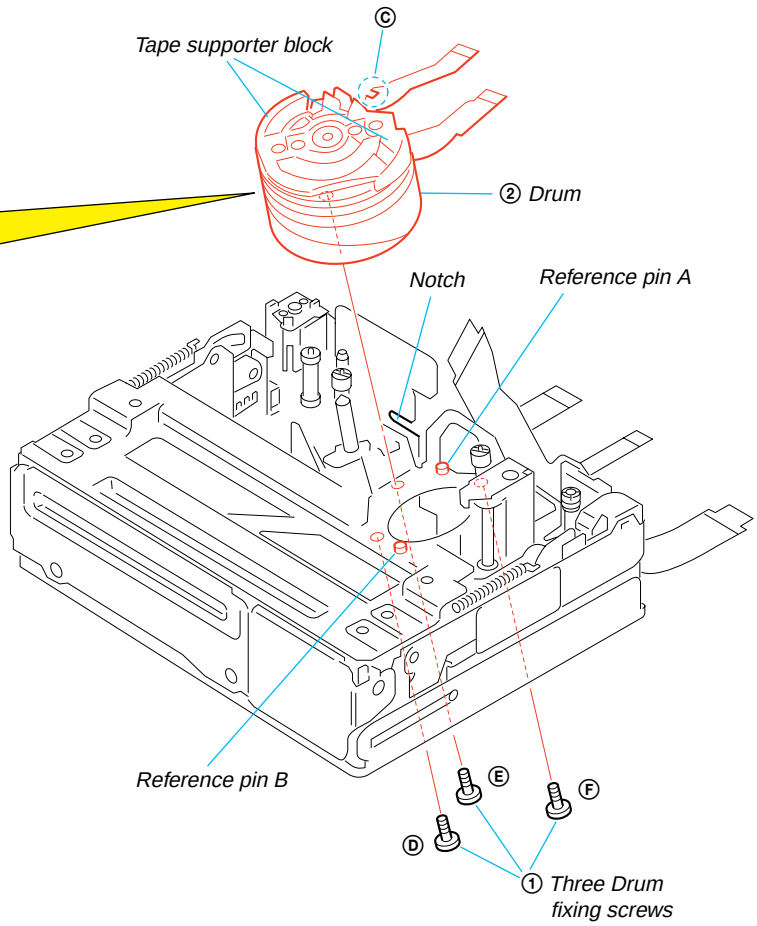
2. Attachment procedure

1) Ensure that head drum fixible board is hooked on the tape supporter block.
2) Hold the tape-supporter block of the drum ② and insert the drum flexible board into the mechanical chassis block assy.
3) Insert the two reference holes A and B of the drum into the reference pins A and B of the drum base assy.
4) Hook the flexible board Ⓒ portion on the notch.
5) Install the three drum fixing screws (M1.4 × 1.3) ① in the order starting from Ⓓ, then Ⓔ, and finally Ⓕ. Then tighten the screws.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
   Return Ⓔ 120°, then apply the screw locking paint (Neji lock).
6) Clean the drum by referring to section2-1.
7) Perform the tape path adjustment. (Refer to “4-4. Tape Path Adjustment”.)

Key Points in Re-assembling

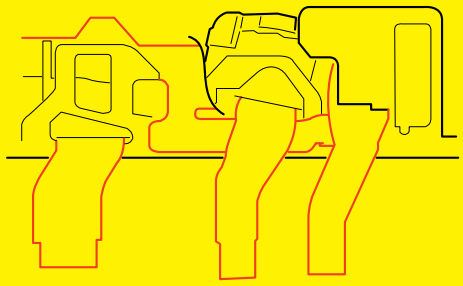


Drum (rear view)



Drum Flexible Board Processing

Key Points in Re-assembling



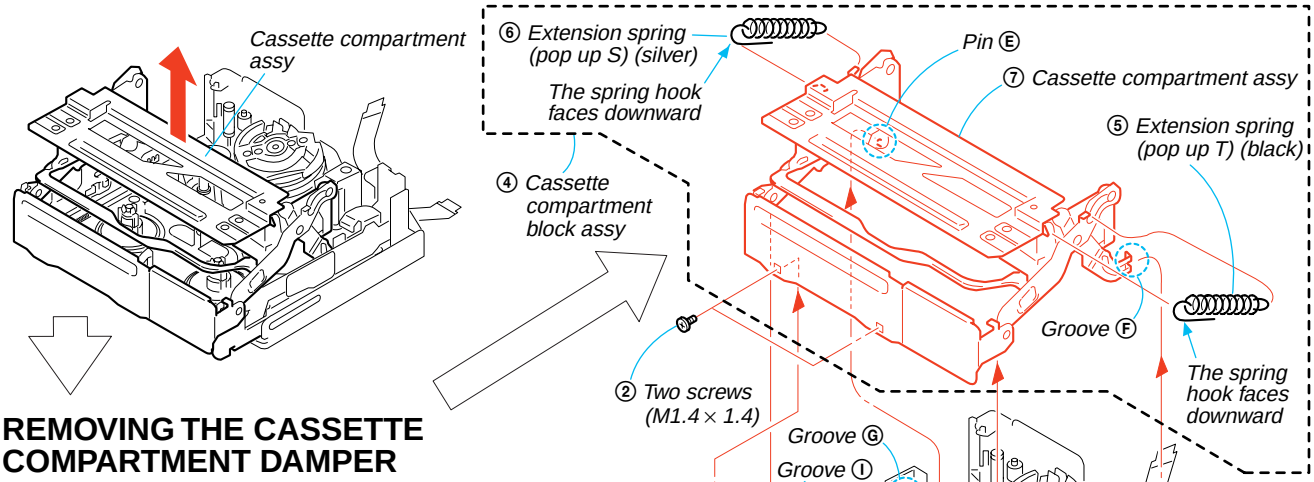
3-3. Cassette Compartment Assy

1. Removal procedure

1) Set the [EJ] mode.
2) Press the cassette compartment down halfway. Pull the cassette compartment damper ① in the direction of the arrow Ⓐ. Then rotate it in the Ⓑ direction, and remove it in the direction of Ⓒ.
3) Remove the two screws (special head screw M1.4 × 1.4) ②.
4) Remove the LS chassis block assy ③ in the direction of the arrow Ⓓ.
5) Remove the pin Ⓔ and groove Ⓕ of the cassette compartment assy ④ from the LS chassis groove Ⓖ and pin Ⓗ. Then remove the cassette compartment block assy ④.
6) Remove the tension spring (POP UP T) (black) ⑤.
7) Remove the tension spring (POP UP S) (silver) ⑥.Then remove the cassette compartment assy ⑦.

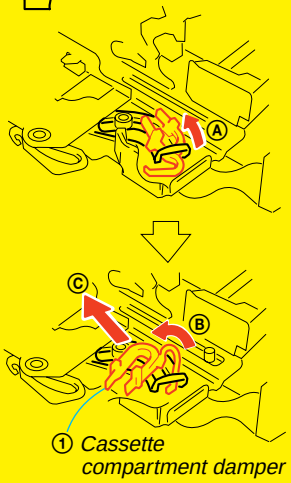
2. Attachment procedure

1) Set the [ULE] mode.
2) Install the tension spring (cassette compartment S) (POP UP S) (silver) ⑥ in to the cassette compartment assy ⑦. (The spring should be hooked on the front stay with the spring end facing upward.)
3) Install the tension spring (cassette compartment T) (POP UP T) (black) ⑤ in to the cassette compartment assy ⑦. (The spring should be hooked on the front stay with the spring end facing upward.)
4) Install the pin Ⓔ and groove Ⓕ of the cassette compartment assy ④ into the LS chassis groove Ⓖ and pin Ⓗ.
5) In the status that the LS block assy ③ is kept open, insert it into the grooves Ⓘ and Ⓙ of the LS chassis block assy.
6) Close the LS chassis block assy ③ in the direction opposite to the arrow Ⓓ, and install it with the two screws (special head screw M1.4 × 1.4) ②.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
7) The cassette compartment down halfway. Pass the Ⓚ portion of the cassette compartment damper ① through the groove at the tip of the cassette compartment. Then pull the Ⓛ portion and fix it using tweezers or something.

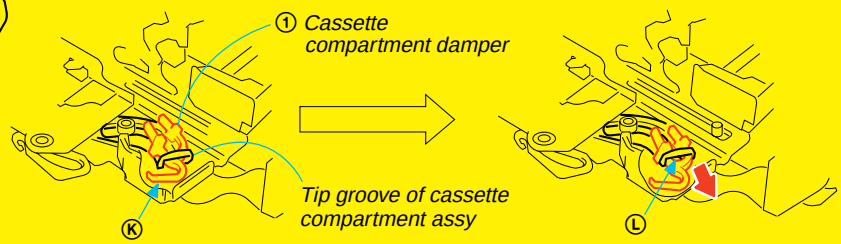


REMOVING THE CASSETTE COMPARTMENT DAMPER

Points to be noted



Key Points in Re-assembling



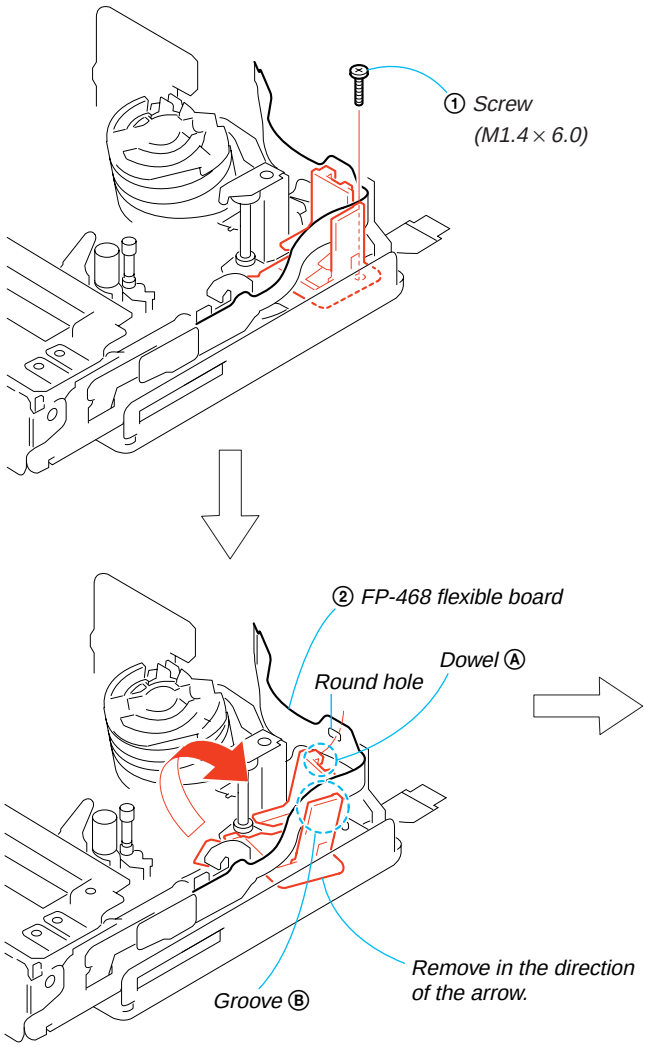
3-4. TG7 Support

1. Removal procedure

1) Remove the screw (special head screw M1.4 × 6.0) ①.
2) Remove the FP-468 flexible board ② from the dowel Ⓐ of the TG7 support.
3) Remove the FP-468 flexible board ② from the groove Ⓑ of the TG7 support.
4) Remove the TG7 support ③ in the direction of the arrow.

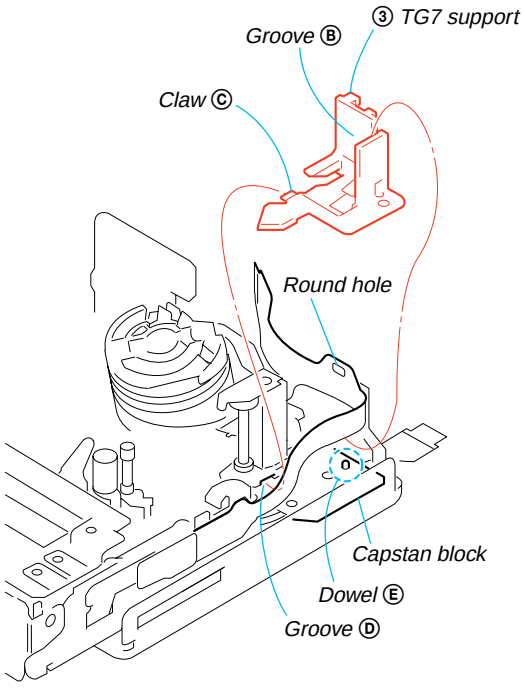
2. Attachment procedure

1) Install the FP-468 flexible board ② into the groove Ⓑ of TG7 support ③.
2) Insert the claw Ⓒ of the TG7 support ③ into the groove Ⓓ of the capstan block, and fix it while aligning with the dowel Ⓔ.
3) Align the round hole of the FP-468 flexible board ② with the dowel Ⓐ of the TG7 support ③.
4) Install the screw (special head screw M1.4 × 6.0) ①.
Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)



Points to be noted

• Be careful not to damage the FP-468 flexible board.



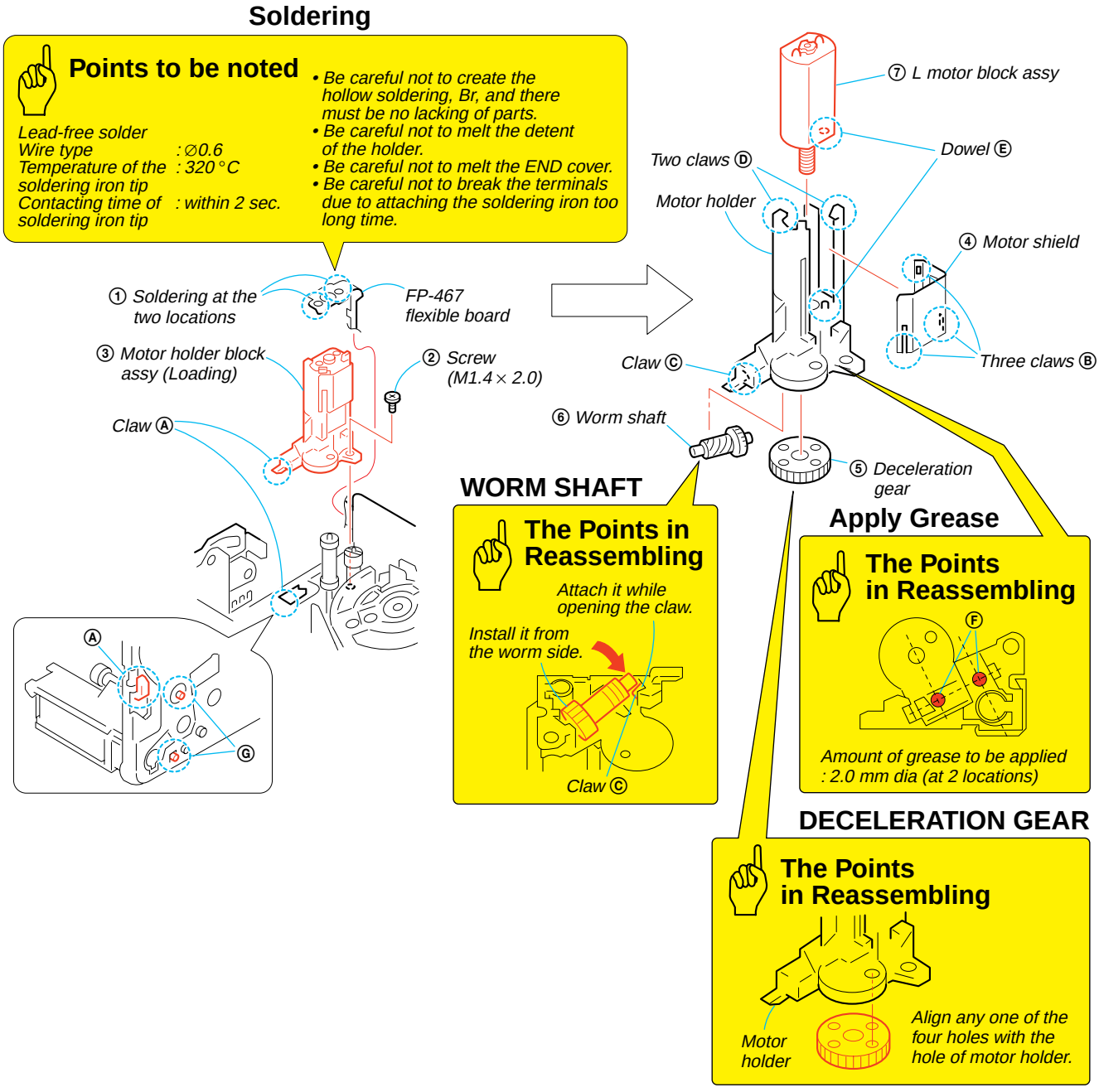
3-5. Motor Holder Block Assy and L Motor Block Assy

1. Removal procedure

1) Remove soldering at the two locations ①, and remove the FP-467 flexible board from the motor holder block assy (loading) ③.
2) Remove the screw (special head screw M1.4 × 2.0) ②.
3) Remove the motor holder block assy (loading) ③ by pulling it off from the claw Ⓐ.
4) Release the three claws Ⓑ and remove the motor shield ④.
5) Remove the deceleration gear ⑤.
6) Release the claw Ⓒ and remove the worm shaft ⑥.
7) Release the two claws Ⓓ and remove the L motor block assy ⑦ from the motor holder.

2. Attachment procedure

1) Confirm the direction of the L motor block assy ⑦. Align the dowels Ⓔ then install into the motor holder. (Insert the motor worm so that the motor worm does not touch the motor holder, and fix it with two claws Ⓓ.
2) Engage the three claws Ⓑ and install the motor shield.
3) Apply 2.0 g of grease (at 2 locations) to the bottom Ⓕ of the motor holder.
4) Install the worm shaft ⑥ from the worm side and set the claw.
5) Install the reduction gear ⑤.
6) Engage the claw Ⓐ and align the two dowels Ⓖ. Then install the motor holder block assy (loading) ③ in the mechanical chassis block. Install the screw (special head screw M1.4 × 2.0) ②.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
7) Make soldering at the two locations ①. Install the motor holder block assy (loading) ③ into the FP-467 flexible board ④.


Soldering
Points to be noted
Lead-free solder
Wire type : ∅0.6
Temperature of the soldering iron tip : 320 °C
Contacting time of soldering iron tip : within 2 sec.
• Be careful not to create the hollow soldering, Br, and there must be no lacking of parts.
• Be careful not to melt the detent of the holder.
• Be careful not to melt the END cover.
• Be careful not to break the terminals due to attaching the soldering iron too long time.
① Soldering at the two locations
FP-467 flexible board
③ Motor holder block assy (Loading)
② Screw (M1.4 × 2.0)
Claw Ⓐ
Ⓐ
Ⓖ
⑦ L motor block assy
Two claws Ⓓ
Dowel Ⓔ
Motor holder
④ Motor shield
Three claws Ⓑ
Claw Ⓒ
⑥ Worm shaft
⑤ Deceleration gear
WORM SHAFT
The Points in Reassembling
Attach it while opening the claw.
Install it from the worm side.
Claw Ⓒ
Apply Grease
The Points in Reassembling
Ⓕ
Amount of grease to be applied : 2.0 mm dia (at 2 locations)
DECELERATION GEAR
The Points in Reassembling
Motor holder
Align any one of the four holes with the hole of motor holder.

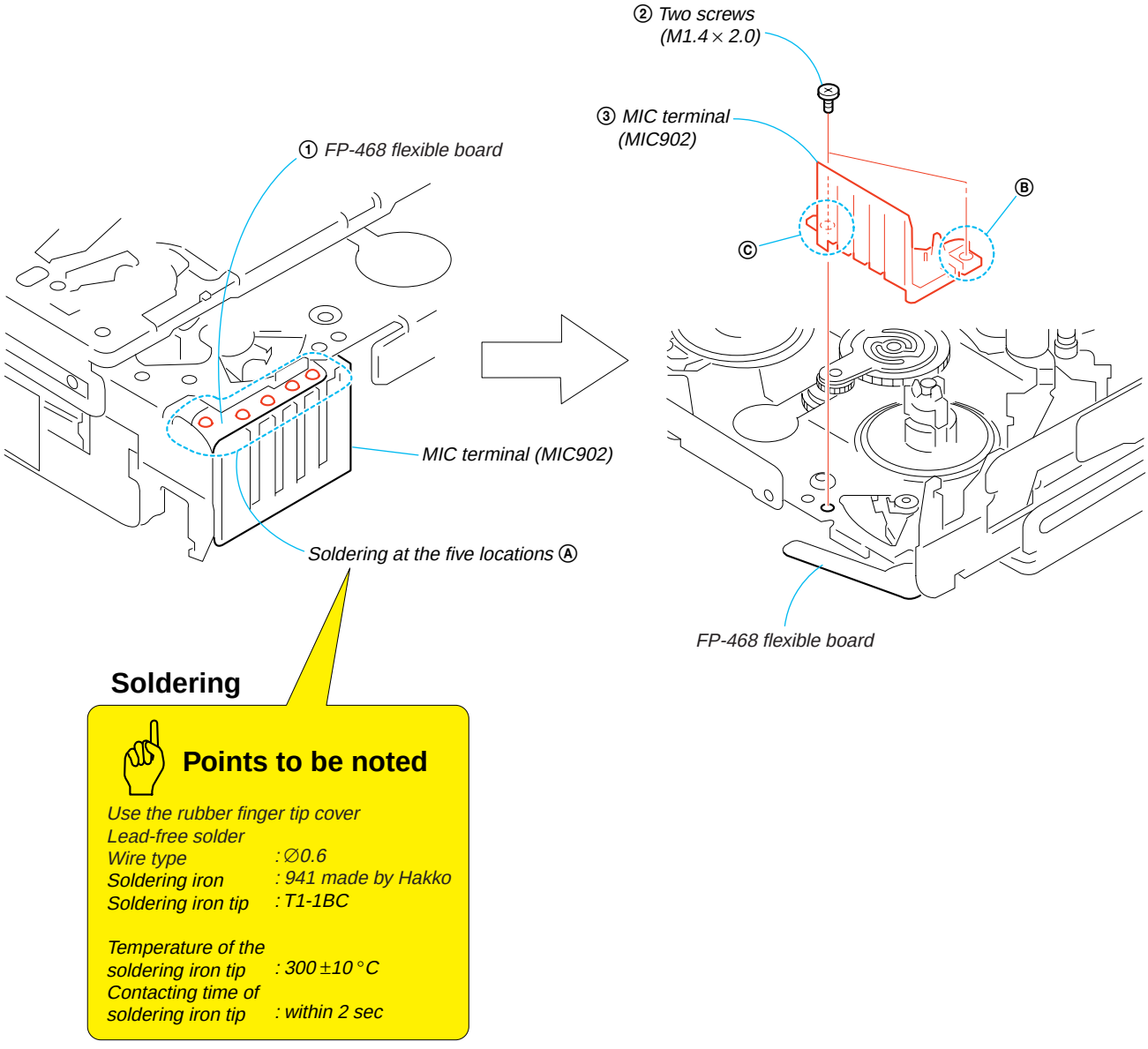
3-6. MIC Terminal (MIC902)

1. Removal procedure

1) Remove soldering at the five locations Ⓐ, and remove the FP-467 flexible board ① from the MIC terminal (MIC902) ③.
2) Remove the screw (special head screw M1.4 × 2.0) ② and remove the MIC terminal (MIC902) ③.

2. Attachment procedure

1) While pressing the top of the MIC terminal (MIC902) ③, tighten the two screws (special head screw M1.4 × 2.0) ② in the order of Ⓑ then Ⓒ.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
2) Make soldering at the five locations Ⓐ, and connect the FP-468 flexible board ① into the MIC terminal (MIC902) .



Soldering

Points to be noted

Use the rubber finger tip cover
Lead-free solder

Wire type	*: ∅0.6*
Soldering iron	*: 941 made by Hakko*
Soldering iron tip	*: T1-1BC*
Temperature of the soldering iron tip	*: 300 ±10 °C*
Contacting time of soldering iron tip	*: within 2 sec*

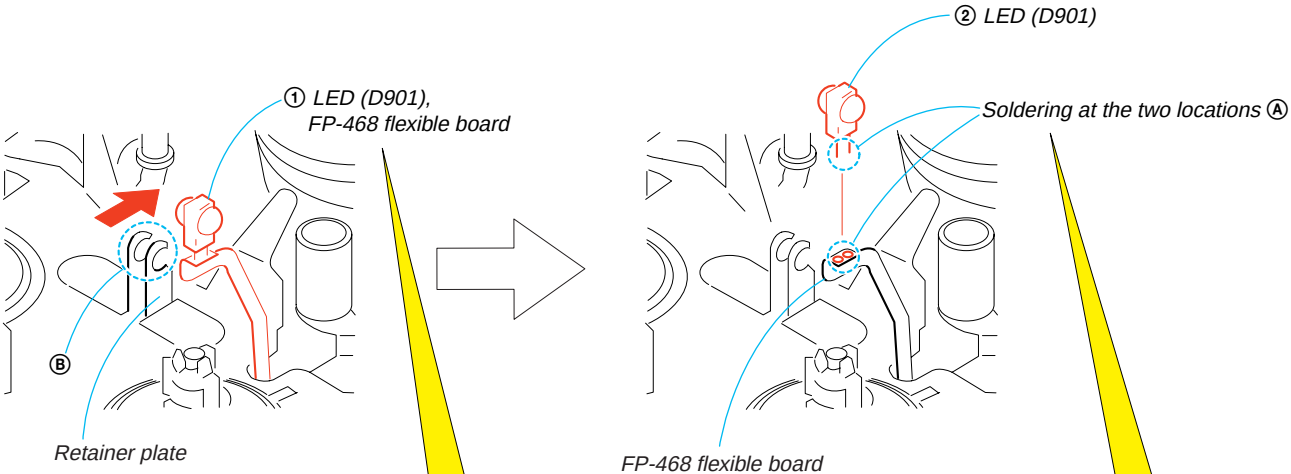
3-7. LED (D901)

1. Removal procedure

1) Remove LED (D901) and the FP-468 flexible board ① from the retainer plate.
2) Remove soldering at the two locations Ⓐ and remove LED (D901) ②.

2. Attachment procedure

1) Install the LED (D901) ② to the FP-468 flexible board by making soldering at the two locations Ⓐ.
2) Fold the FP-468 flexible board ① beneath the LED (D901) with finger tip so that it is inserted into the Ⓑ portion of the retainer plate.



LED (D901), FP-468 FLEXIBLE BOARD

Points to be noted

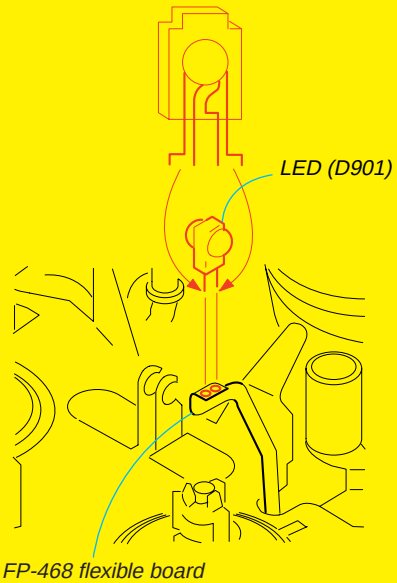
- *There must be no solder crack.*
- *There must be no scars and no stains.*
- *The flexible board must have no breakdown.*
- *The retainer plate and LED block must have no deformation.*

Soldering

Points to be noted

Rubber finger tip protection cover must be used.
Lead-free solder
Wire type: diameter ∅0.6
Soldering iron: 941 made by Hakko
Soldering iron tip: T1-1BC
Temperature of the soldering iron tip: 300 ±10 °C
Contacting time of soldering iron tip: within 2 sec.

Direction of the terminal is specified.



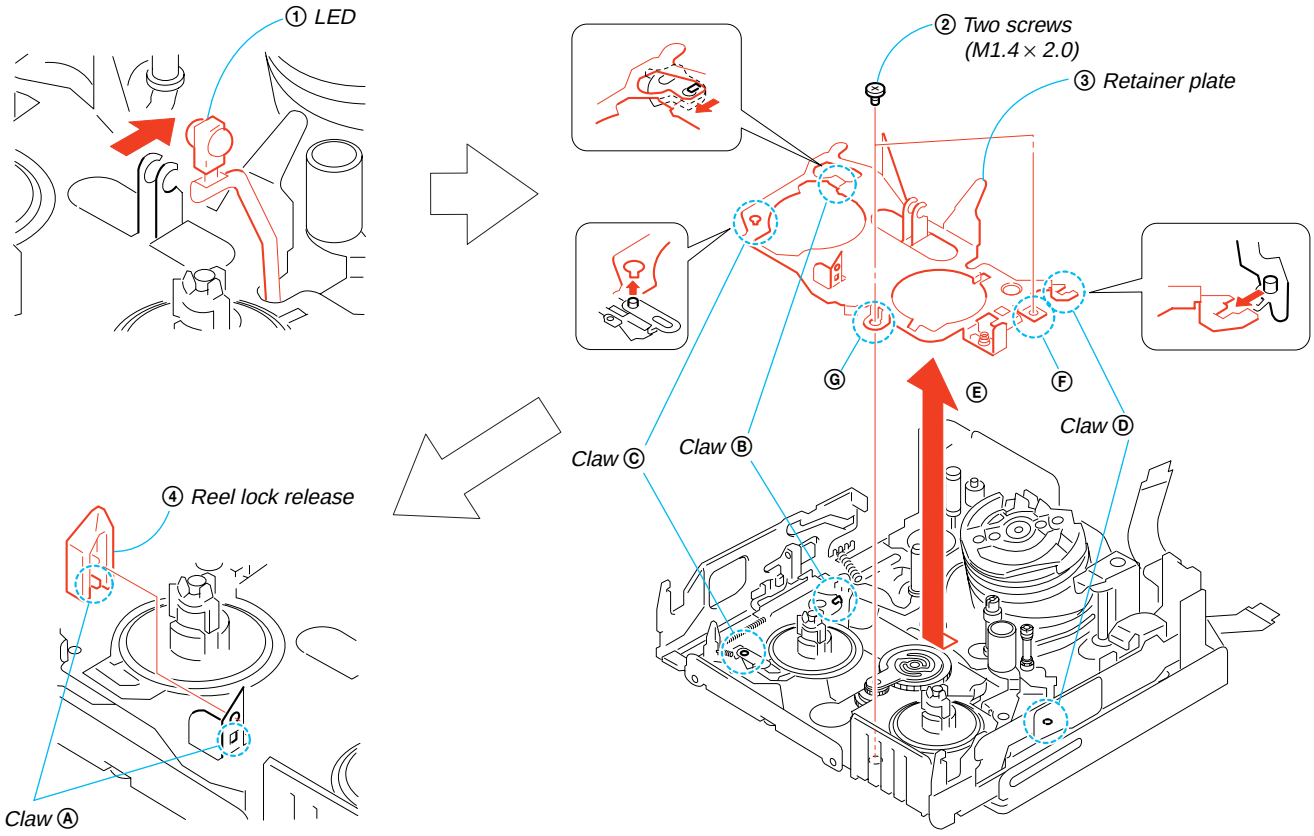
3-8. Retainer Plate

1. Removal procedure

1) Remove LED ① from the retainer plate.
2) Remove the two screws (special head screw M1.4 × 2.0) ②.
3) Release the three claws Ⓑ, Ⓒ and Ⓓ, and remove the retainer plate ③ in the direction of the arrow mark Ⓔ.
4) Release the claw Ⓐ and remove the reel lock release ④.

2. Attachment procedure

1) Install the reel lock release ④.
2) Place the retainer plate ③ on top of the LS chassis block assy and engage the three claws in the order starting from Ⓓ, Ⓒ and Ⓑ.
3) Install the two screws (special head screw M1.4 × 2.0) ② in the order starting from Ⓕ then Ⓖ.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
4) Install LED ① to the retainer plate.



REEL LOCK RELEASE

Key Points in Re-assembling

- *The reel lock release should not be re-used.*
- *The retainer plate must not have any deformation.*
- *The reel lock release should be fully installed. (Should not be left in the half-installed state.)*

RETAINER PLATE

Key Points in Re-assembling

- *All claws must be fully engaged. (Caution : No claws should be left disengaged.)*
- *The flexible board should not be pinched by anything.*
- *The retainer plate must not touch with the MIC terminal.*

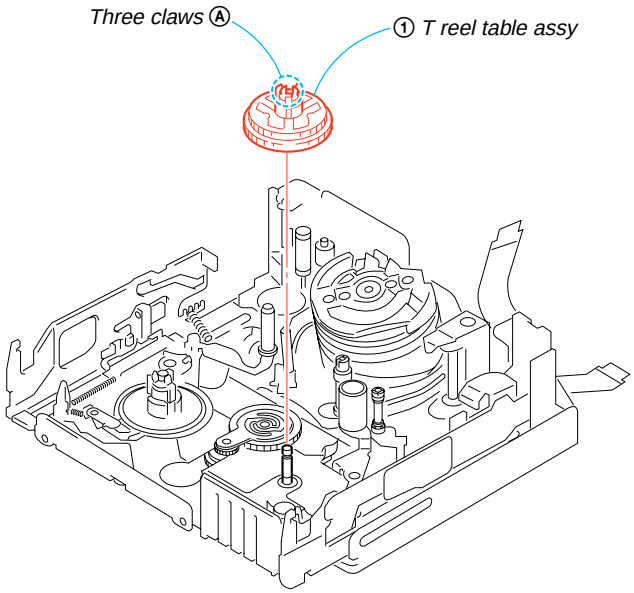
3-9. T Reel Table Assy

1. Removal procedure

1) Remove the T reel table assy ①, averting three claws Ⓐ.

2. Attachment procedure

1) Confirm that the supplied part is really the T reel table assy ①. Insert the T reel table assy ① into the T reel shaft. Install the T reel table assy ① and lock it at the position where you can hear the snapping sound. You can find the locking position by rotating the T reel table assy ①.



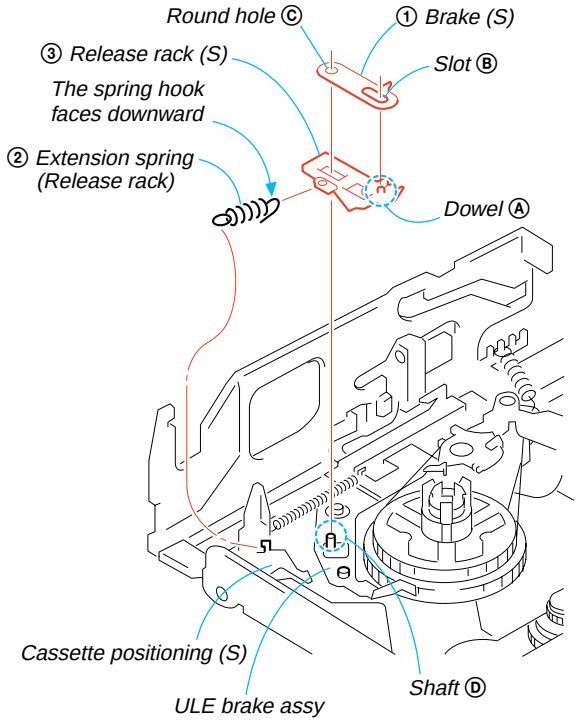
3-10. Brake (S) and Release Rack (S)

1. Removal procedure

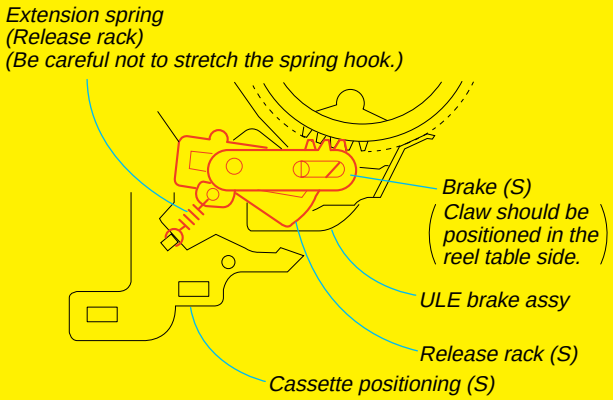
1) Remove the brake (S) ①.
2) Remove the tension spring (release rack (S)) ②.
3) Remove the release rack (S) ③.

2. Attachment procedure

1) Remove the release rack (S) ③ by holding it with a ultra precision tweezers. Install the tension spring (release rack) ② while being careful of the installation direction of the tension spring.
2) Hook the tension spring (release rack) ② on the hook of the cassette positioning (S), and then install it in the ULE brake assy.
3) Insert the slot Ⓑ in the dowel Ⓐ of the release rack (S) ③. Insert the round hole Ⓒ into the pivot shaft Ⓓ and install the brake (S) ①.
(Installation direction: Claw should be positioned in the reel table side.)



Key Points in Re-assembling


Extension spring (Release rack) (Be careful not to stretch the spring hook.)
Brake (S) Claw should be positioned in the reel table side.
ULE brake assy
Release rack (S)
Cassette positioning (S)

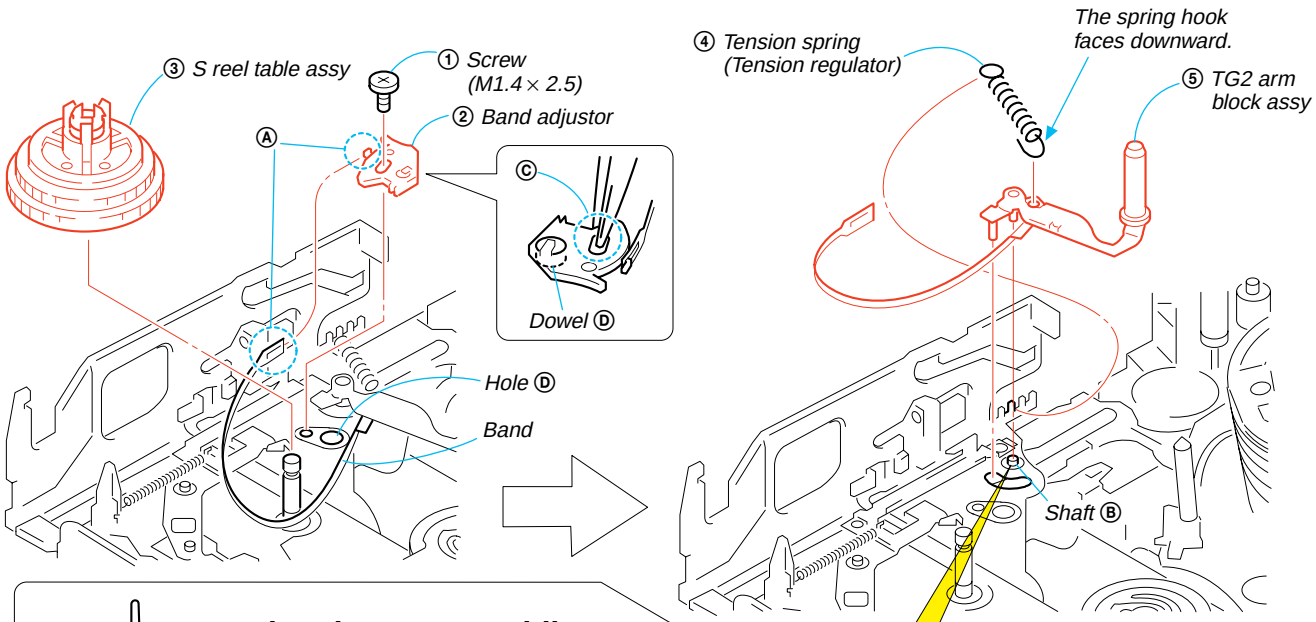
3-11. Band Adjuster, S Reel Table Assy and TG2 Arm Block Assy

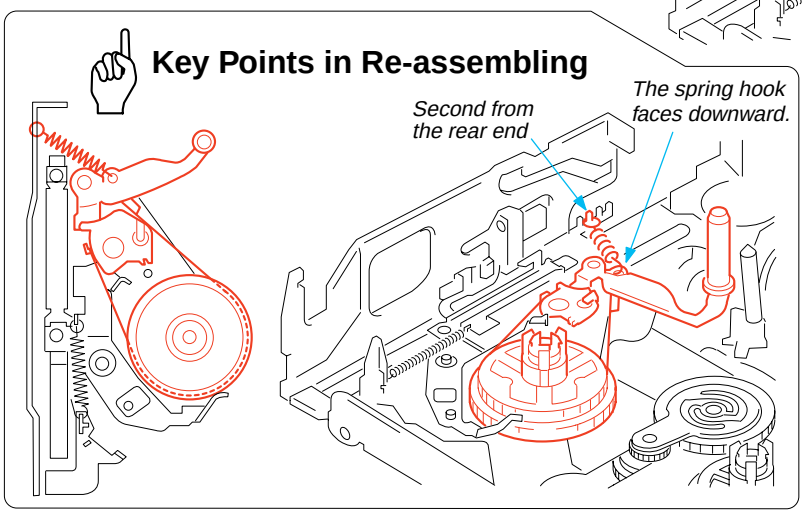
1. Removal procedure

1) Remove the screw (special head screw M1.4 × 2.5) ①.
2) Remove the band Ⓐ of the TG2 arm block and remove the band adjuster ②.
3) Remove the S reel table assy ③.
4) Remove the tension spring (tension regulator spring) ④.
5) Remove the TG2 arm block assy ⑤.

2. Attachment procedure

1) Install the S reel table assy ③.
2) Apply grease in the TG2 arm pivot shaft Ⓑ.
   Amount of grease: a ball of 1.0 mm diameter of grease
   Re-application of grease to the point which is greased already before is not necessary.
3) Hold the TG2 arm block assy ⑤ with tweezers and insert it in the TG2 arm pivot shaft Ⓑ.
4) Hook the tension spring (tension regulator spring) ④ on the TG2 arm block ⑤ with tweezers so that the hook faces downward.
5) Hook the tension spring (tension regulator spring) ④ on the LS chassis block assy (the second hook from the rear end).
6) Hook the Ⓐ portion of the band on the claw of the band adjuster ②.
7) Hold the band adjuster with tweezers as shown in Ⓒ. Insert the band into groove of the S reel table assy while rotating it, and insert the adjuster's dowel into the dowel hole Ⓓ of the LS chassis block assy.
8) Install the band adjuster ② with the screw (special head screw M1.4 × 2.5) ①.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)
9) Perform the TG2 FWD Position Adjustment referring to section 4-1.
10) Perform the FWD Back-tension Adjustment referring to section 4-4.
11) Perform the Reel Torque Check referring to section 4-2.

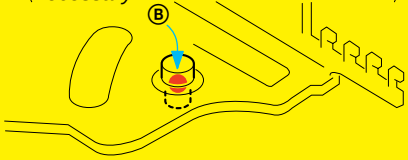




Apply Grease

Points to be noted

During installation, apply grease in the TG2 arm pivot shaft hole.
Amount of grease:
a ball of grease of 1.0 mm diameter
Re-application of grease to the point which is greased already before is not necessary.



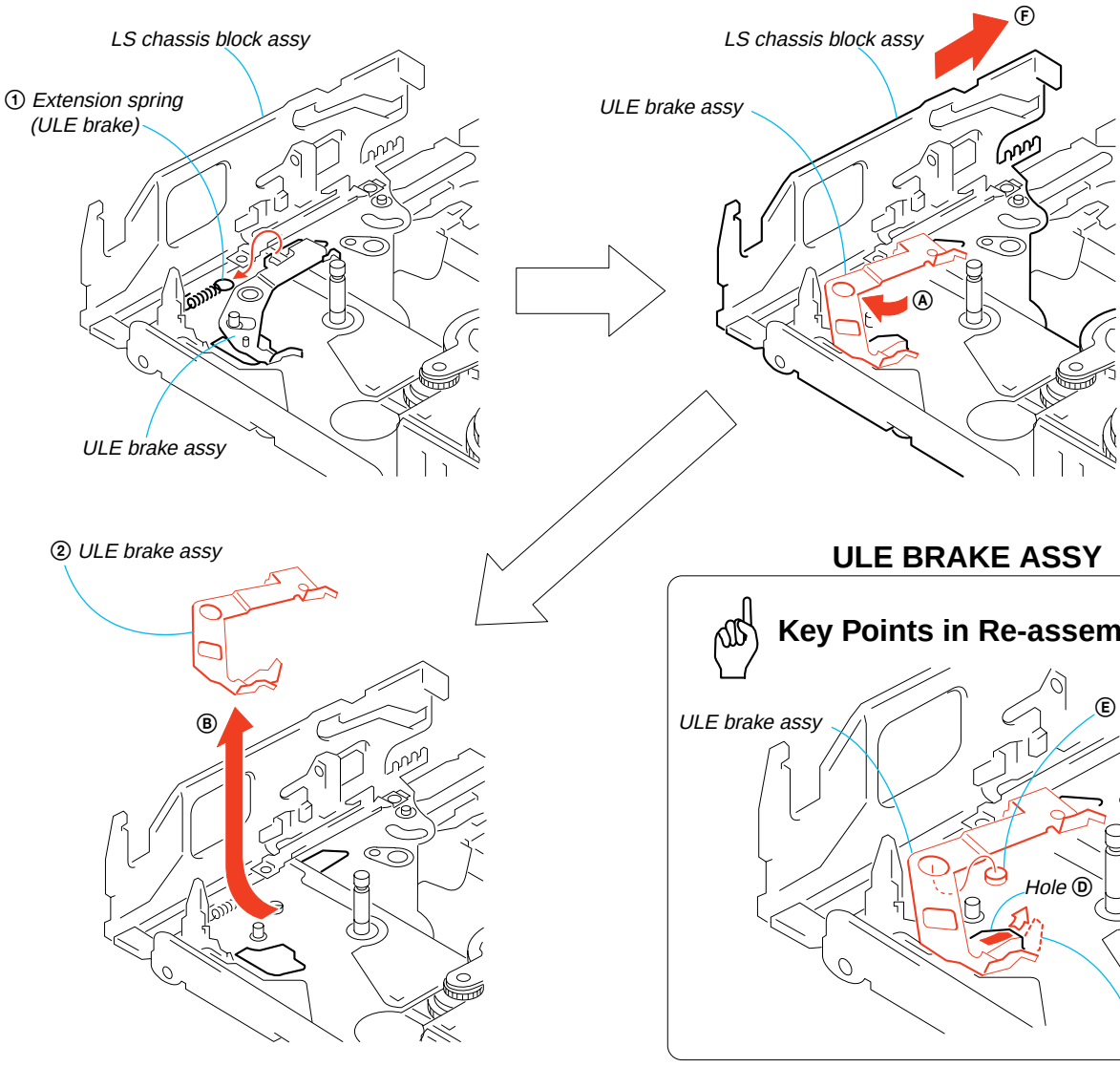
3-12. ULE Brake Assy

1. Removal procedure

1) Remove the tension spring (ULE brake) ① from the ULE brake assy ②.
2) Slide the LS chassis block assy slightly in the direction of the arrow Ⓕ.
3) Slant the ULE brake assy ② in the direction of the arrow Ⓐ and remove it by sliding it in the direction of Ⓑ.

2. Attachment procedure

1) Confirm the front side and the rear side of the ULE brake assy ②. Hold it correctly with tweezers. Insert the portion Ⓒ into the hole Ⓓ of the LS chassis block assy and install the center hole in the Ⓔ of the chassis.
2) Install the tension spring (ULE brake assy) ①.



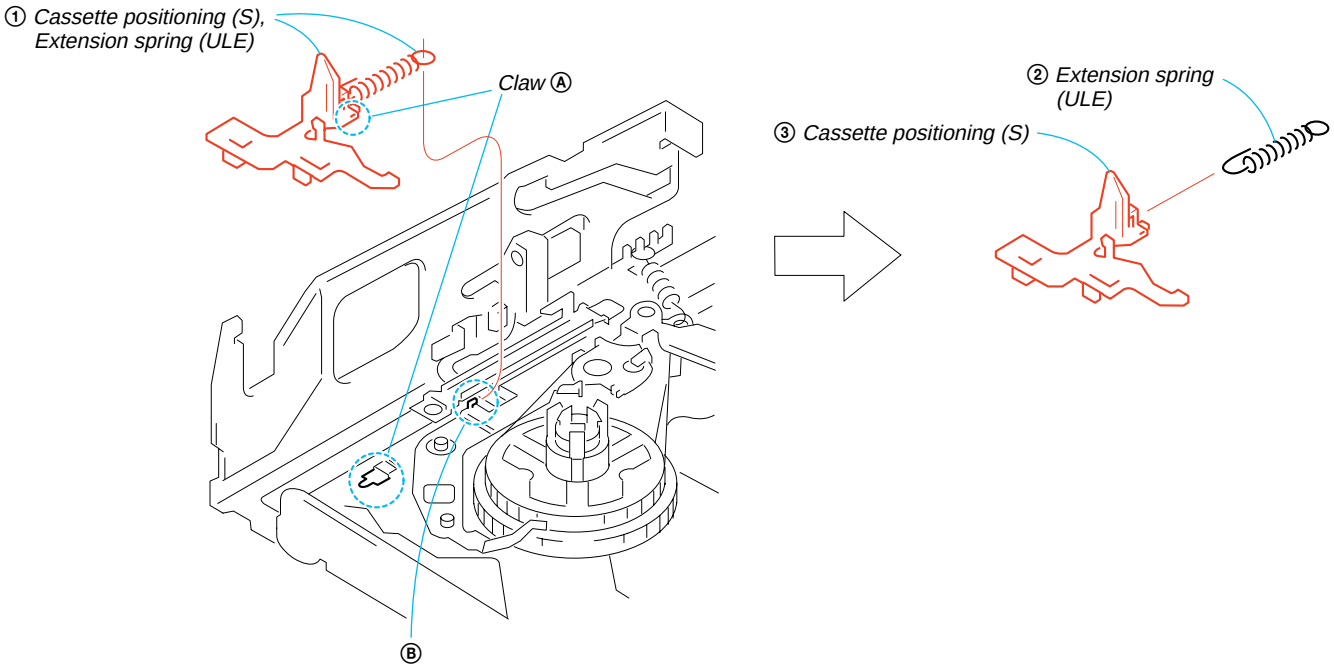
3-13. Cassette Positioning (S)

1. Removal procedure

1) Remove the tention spring (ULE brake) ② from the hook Ⓑ of ULE brake assy.
2) Slide the cassette positioning (S), then remove the cassette positioning (S) and tension spring (ULE brake) ① all together at the same time.
3) Remove the tension spring (ULE brake) ② from the cassette positioning (S) ③.

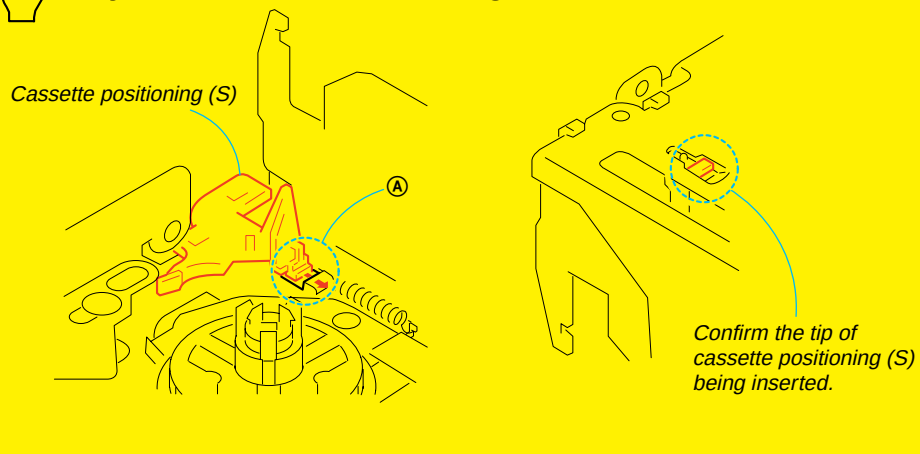
2. Attachment procedure

1) Hook the tension spring (ULE brake) ② on the cassette positioning (S) ③ with tweezers.
2) Hold the cassette positioning (S) ③ with tweezers and insert the top tip of the claw into the LS chassis block assy Ⓐ. Lock it by sliding it in.
3) Install the other end of the tension spring (ULE brake) ② on the hook Ⓑ.



CASSETTE POSITIONING (S)

Key Points in Re-assembling



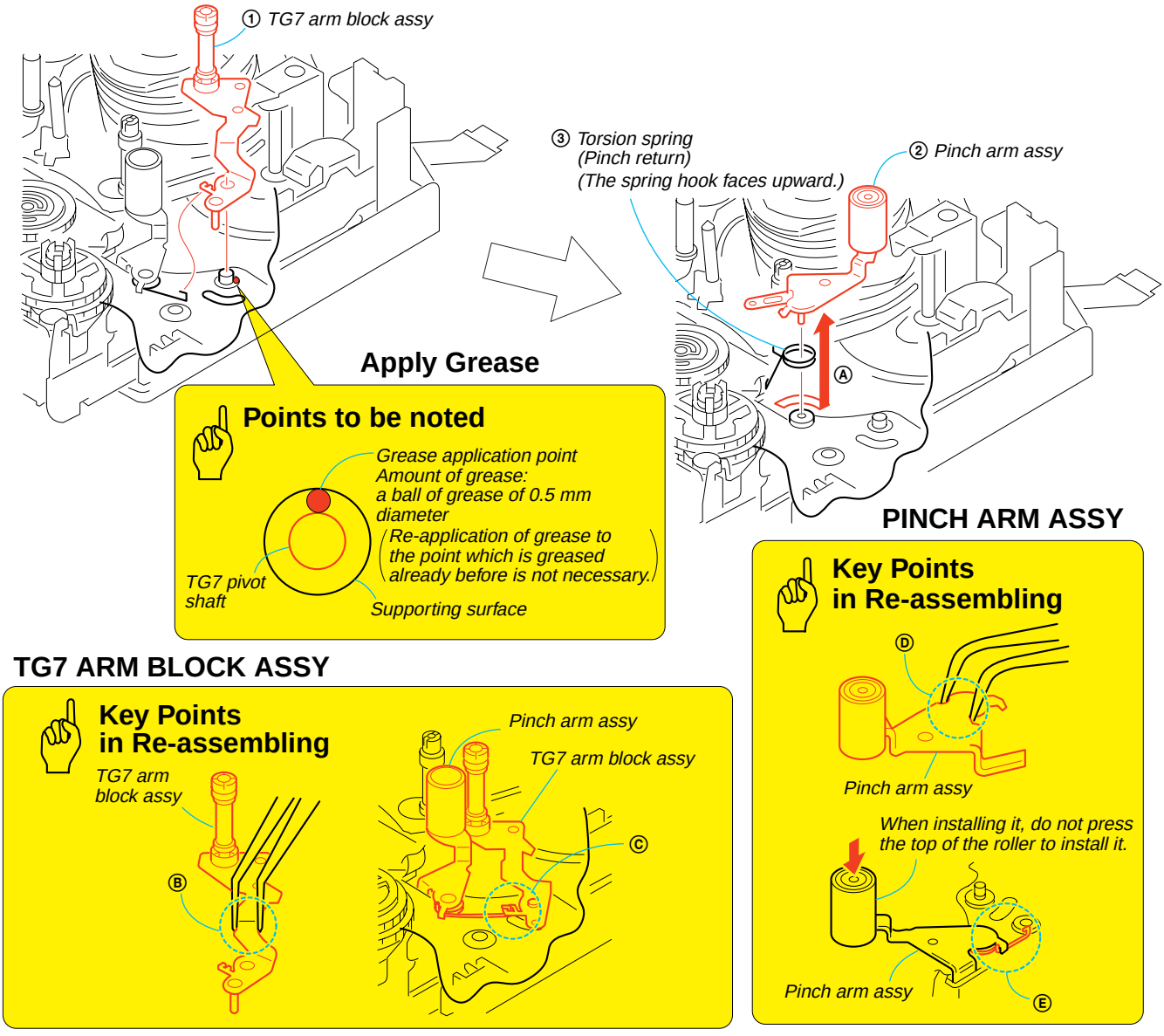
3-14. TG7 Arm Block Assy and Pinch Arm Assy

1. Removal procedure

1) Remove the TG7 arm block assy ①.
2) Rotate the pinch arm assy ② in the direction of the arrow Ⓐ and remove it.
3) Remove the torsion spring (pinch return) ③.

2. Attachment procedure

1) Hold the torsion spring (pinch return) ③ with tweezers. Confirm that the hook faces upward and install it in the bearing.
2) Hold the pinch arm assy ② as shown in Ⓓ and install it in the pinch arm bearing.
3) Hold the torsion coil spring (pinch return) ③ with tweezers and install it as shown in Ⓔ.
4) Apply grease on the supporting surface of the TG7 pivot shaft.
   Amount of grease: a ball of grease of 0.5 mm diamte
   Re-application of grease to the point which is greased already before is not necessary.
5) Hold the TG7 arm block assy ① as shown in Ⓑ and insert it in the pivot shaft of the TG7 arm.
6) Hold the torsion spring (pinch return) ③ with tweezers and install it on the hook of the TG7 arm block assy ① as shown in Ⓒ.
7) Confirm that the torsion spring (pinch return) ③ does not override on the pinch supporting shaft.



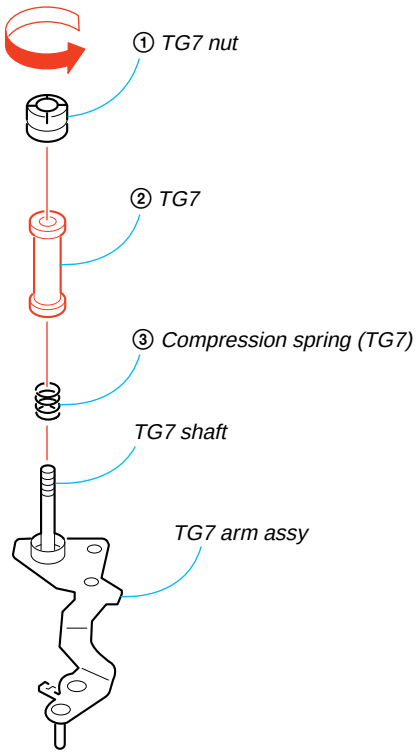
3-15. TG7

1. Removal procedure

1) Remove the TG7 nut ① by turning it in the direction of the arrow.
2) Remove the TG7 ② and compression coil spring ③ from the TG7 arm block assy.

2. Attachment procedure

1) Install the compression coil spring ③ and TG7 ② in the TG7 shaft of the TG7 arm block assy.
2) Install the TG7 nut ① by turning it in the opposite direction of the arrow.



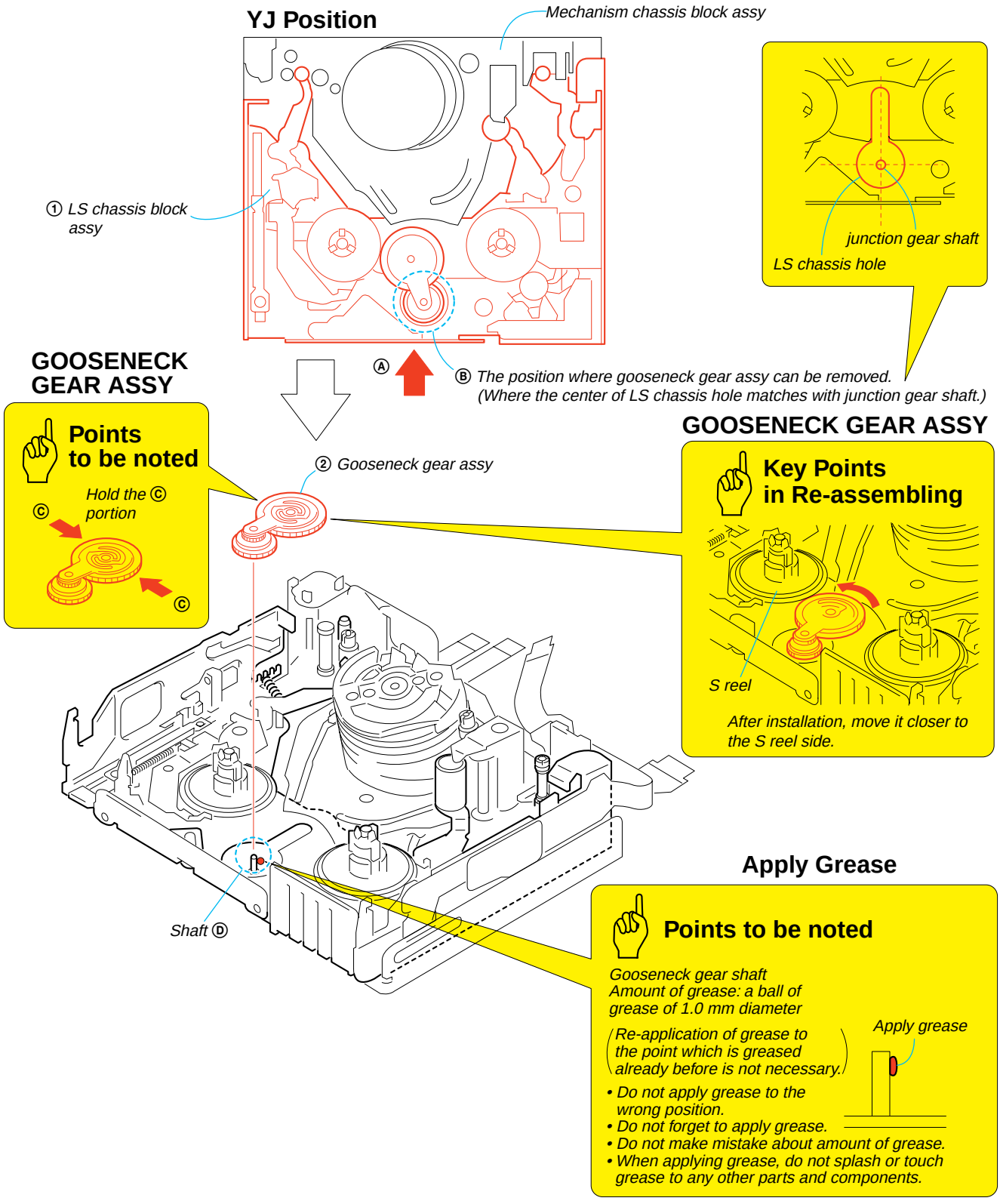
3-16. Gooseneck Gear Assy

1. Removal procedure

1) Move the LS chassis block assy ① in the direction of the arrow Ⓐ to make it in YJ position.
   YJ position: The position Ⓑ where gooseneck gear assy can be removed. (where the center of LS chassis hole matches with junction gear shaft.)
2) Remove the gooseneck gear assy, holding it with Ⓒ.

2. Attachment procedure

1) Apply grease to the gooseneck gear shaft Ⓓ portion.
   Amount of grease: a ball of grease of 1.0 mm diameter
   Need no re-application to one which applied already.
2) Install the gooseneck gear assy, holding it with Ⓒ in the gooseneck gear shaft.
3) Move it closer to the S reel.


YJ Position
Mechanism chassis block assy
① LS chassis block assy
junction gear shaft
LS chassis hole
Ⓐ
Ⓑ The position where gooseneck gear assy can be removed.
(Where the center of LS chassis hole matches with junction gear shaft.)
GOOSENECK GEAR ASSY
Points to be noted
Hold the Ⓒ portion
Ⓒ
Ⓒ
② Gooseneck gear assy
GOOSENECK GEAR ASSY
Key Points in Re-assembling
S reel
After installation, move it closer to the S reel side.
Shaft Ⓓ
Apply Grease
Points to be noted
Gooseneck gear shaft
Amount of grease: a ball of grease of 1.0 mm diameter
Re-application of grease to the point which is greased already before is not necessary.
Apply grease
• Do not apply grease to the wrong position.
• Do not forget to apply grease.
• Do not make mistake about amount of grease.
• When applying grease, do not splash or touch grease to any other parts and components.

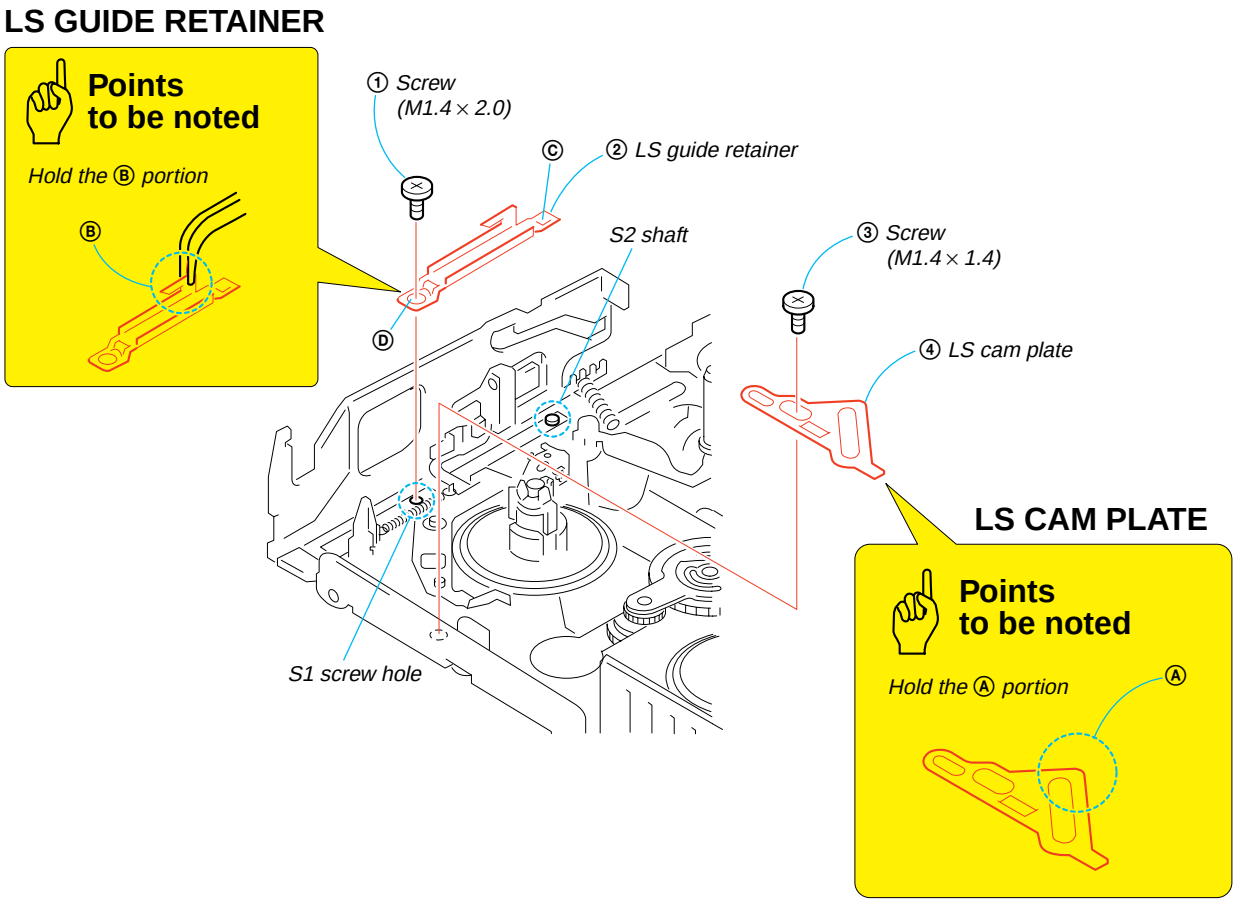
3-17. LS Guide Retainer and LS Cam Plate

1. Removal procedure

1) Remove the screw (special head screw M1.4 × 2.0) ①. and remove the LS guide retainer ②.
2) Remove the screw (special head screw M1.4 × 1.4) ③ and remove the LS cam plate ④.

2. Attachment procedure

1) Hold the LS cam plate with Ⓐ and place it aligning the two dowels. Tighten the screw (special head screw M1.4 × 1.4) ③ in half way.
2) Adjust the LS cam plate by referring to section 4-5.
3) Hold the LS guide retainer ② with Ⓑ and hook its key hole Ⓒ on the S2 shaft, and align the hole Ⓓ to S1 screw hole.
4) Install the screw (special head screw M1.4 × 2.0) ① in the S1 screw hole.
   Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)



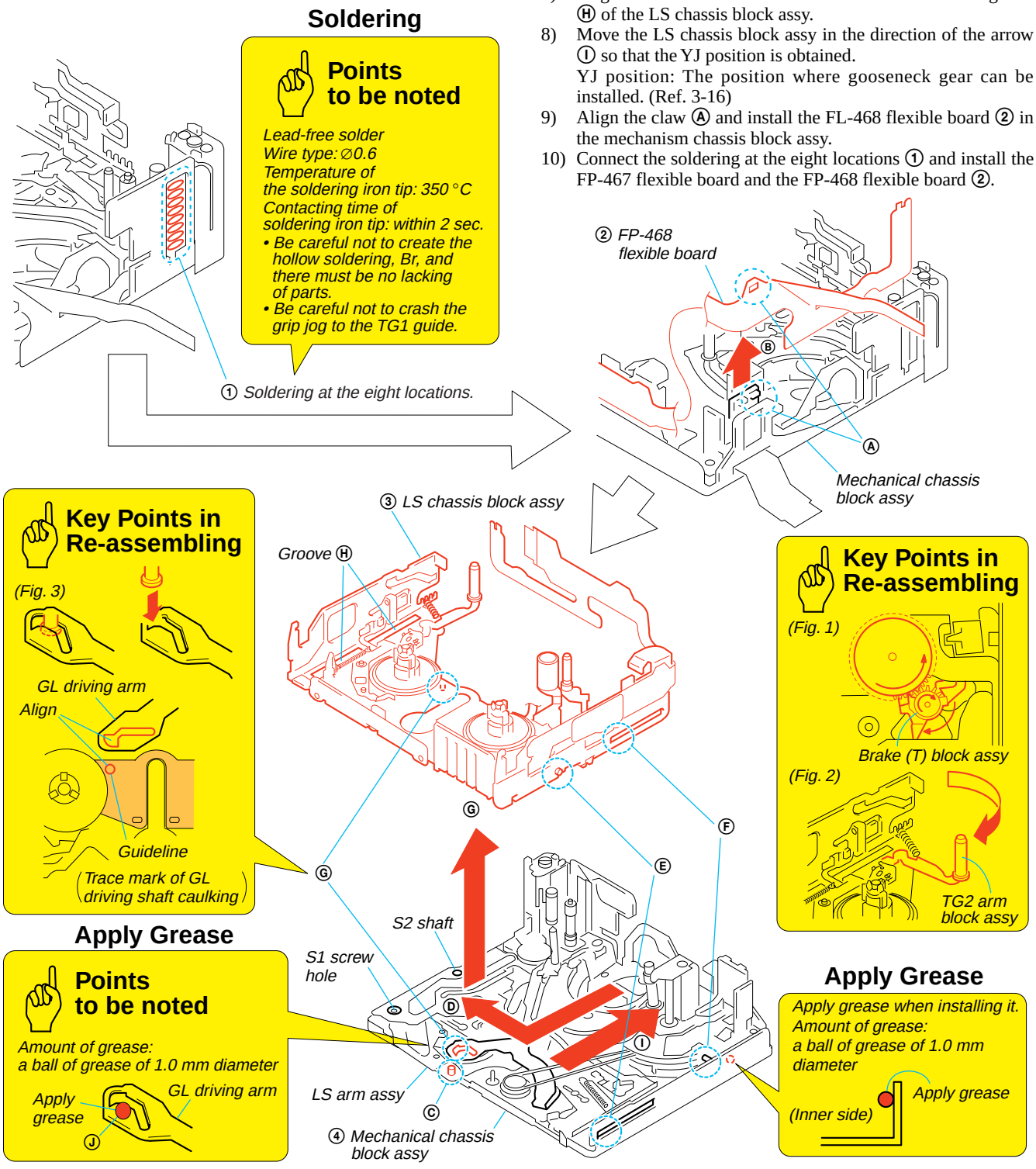
3-18. LS Chassis Block Assy and Mechanical Chassis Block Assy

1. Removal procedure

1) Remove soldering at the eight locations ①.
2) Release the claw Ⓐ and remove the FP-468 flexible board ② from the mechanical chassis block assy in the direction of the arrow Ⓑ.
3) Raise the front portion of the LS chassis block assy ③ so that the pin Ⓒ of the LS arm assy is removed. Move the LS chassis block assy ③ in the direction of the arrow Ⓓ and release the three pins of Ⓔ, Ⓕ and Ⓖ, and also groove.
4) Remove the LS chassis block ④ from the mechanical chassis block assy.

2. Attachment procedure

1) Apply grease to the GL drive arm Ⓙ portion and mechanism chassis block L.
   Amount of grease: a ball of grease of 1.0 mm diameter
2) Rotate the T reel table assy in the counter-clockwise direction and move the brake T block to the position shown in Fig. 1. (Fig. 1)
3) Move the TG2 arm block to the inner side. (Fig. 2)
4) Hold the cam groove of the GL driving arm with tweezers through LS chassis hole Ⓚ and pick it up.
5) Insert the GL drive shaft into the cam groove of the raised GL drive arm using the trace mark of caulking on the side of the S reel of the LS chassis block assy. (Fig. 3)
6) Align the pins Ⓔ, Ⓕ and Ⓖ with the grooves.
7) Align the left side S1 screw hole and S2 shaft with the goove Ⓗ of the LS chassis block assy.
8) Move the LS chassis block assy in the direction of the arrow Ⓘ so that the YJ position is obtained.
   YJ position: The position where gooseneck gear can be installed. (Ref. 3-16)
9) Align the claw Ⓐ and install the FL-468 flexible board ② in the mechanism chassis block assy.
10) Connect the soldering at the eight locations ① and install the FP-467 flexible board and the FP-468 flexible board ②.



3-19. Brake (T) Block Assy

1. Removal procedure

1) Hold the Ⓐ portion and remove the brake (T) block assy ①.

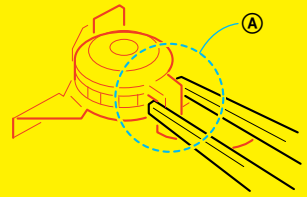
2. Attachment procedure

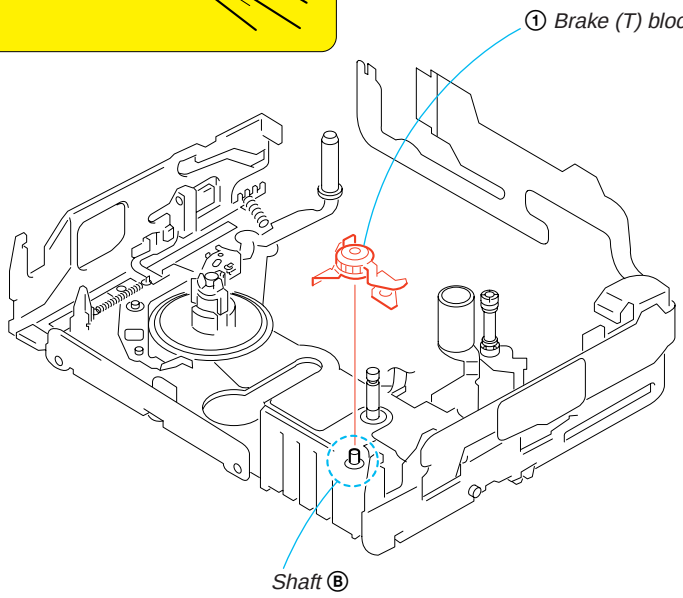
1) Hold the Ⓐ portion of the brake (T) block assy ①. While inserting the slot portion into the notch of the LS chassis block assy, install it into the shaft Ⓑ.
2) After completing installation of T reel table assy (Refer to 3-9.), rotate the brake (T) block assy ① in the clockwise direction by rotating T reel talbe assy in the counter-clockwise direction. (Fig. 1)

BRAKE (T) BLOCK ASSY

Points to be noted

Hold the Ⓐ portion

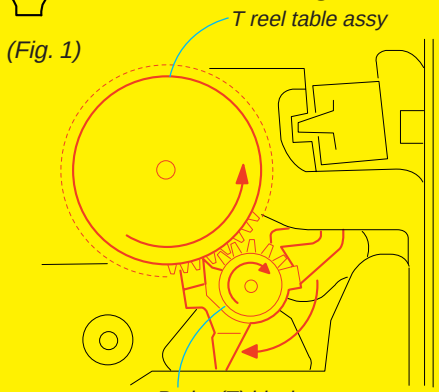




BRAKE (T) BLOCK ASSY

Key Points in Re-assembling

(Fig. 1)



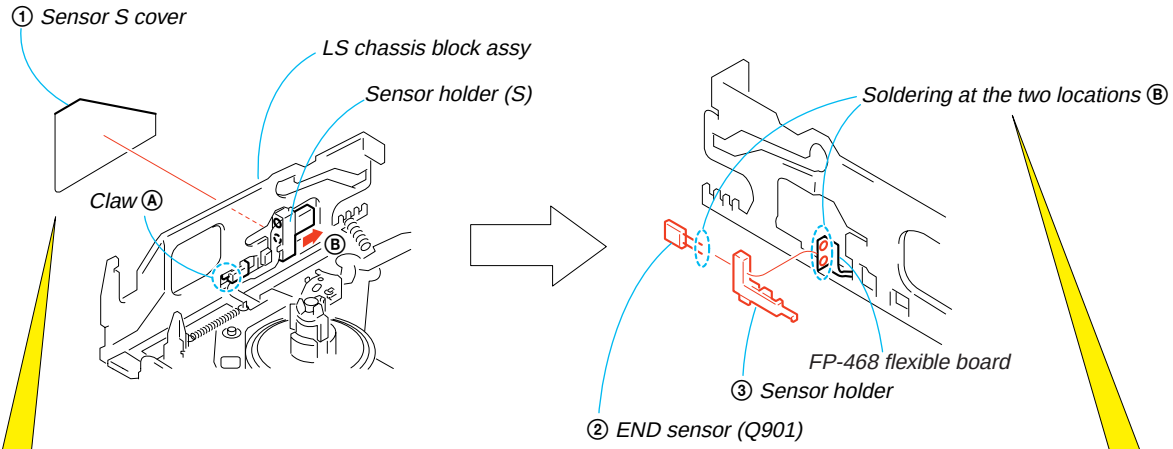
3-20. END Sensor (Q901)

1. Removal procedure

1) Peel off the sensor S cover ①.
2) Release the claw Ⓐ of the sensor holder (S) ③. Remove it from the LS chassis block assy by sliding it in the direction of the arrow Ⓑ.
3) Remove soldering at the two locations and remove the END sensor (Q901) ② and the sensor holder (S) ①.

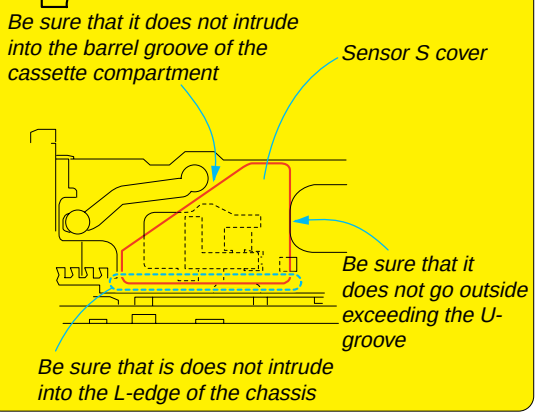
2. Attachment procedure

1) Connect the END sensor (Q901) ② and the sensor holder (S) ③ to the FP-468 flexible board by soldering them at the two locations Ⓑ.
2) Slide the END sensor (Q901) ② and the sensor holder (S) ③ in the direction of the arrow Ⓒ to install them in the LS chassis block assy.
3) Hook the flexible board on the end of the Ⓓ portion.
4) Attach the sensor S cover ①.



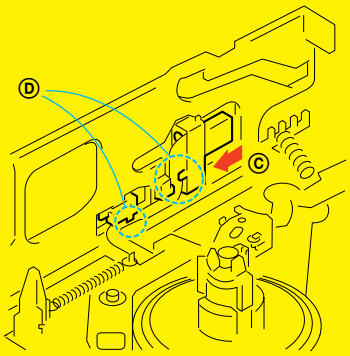
SENSOR S COVER

Key Points in Re-assembling


Be sure that it does not intrude into the barrel groove of the cassette compartment
Sensor S cover
Be sure that it does not go outside exceeding the U-groove
Be sure that is does not intrude into the L-edge of the chassis

END SENSOR (Q901), SENSOR HOLDER (S)

Key Points in Re-assembling



Soldering

Points to be noted

Use the rubber finger tip
cover Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC

Temperature of the soldering iron tip : 300 ±10 °C
Contacting time of soldering iron tip : within 2 sec

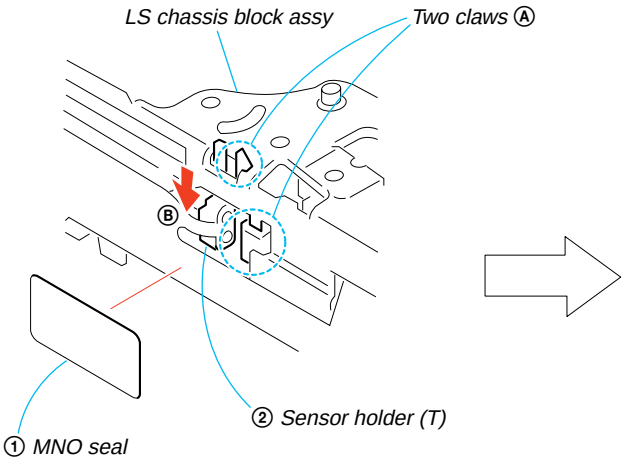
3-21. TOP Sensor (Q902)

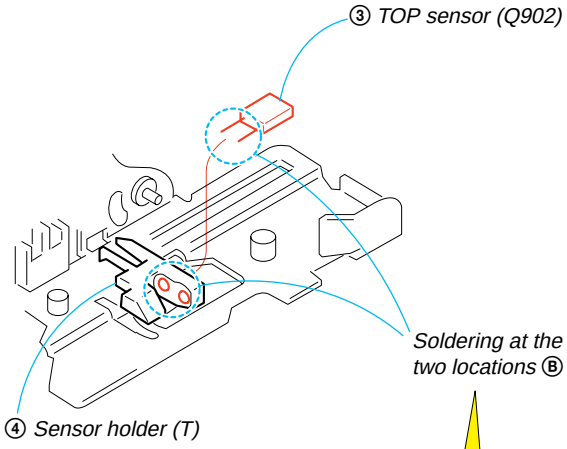
1. Removal procedure

1) Peel off the MNO seal ①.
2) Release the two claws of the sensor holder (T) ② at the two locations Ⓐ. Remove it from the LS chassis block assy by sliding it in the direction of the arrow Ⓑ.
3) Remove the soldering at the two locations Ⓑ and remove the TOP sensor (Q902) ③ and the sensor holder (T) ④.

2. Attachment procedure

1) Connect the TOP sensor (Q902) ③ and the sensor holder (T) ④ to the FP-468 flexible board by soldering them at the two locations Ⓑ.
2) Engage the two claws Ⓐ to install the TOP sensor (Q902) ③ and the sensor holder (T) ④ in the LS chassis block assy.
3) Attach the MNO seal ①.





Soldering

Points to be noted

Use the rubber finger tip cover
Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC

Temperature of the soldering iron tip : 300 ±10 °C
Contacting time of soldering iron tip : within 2 sec

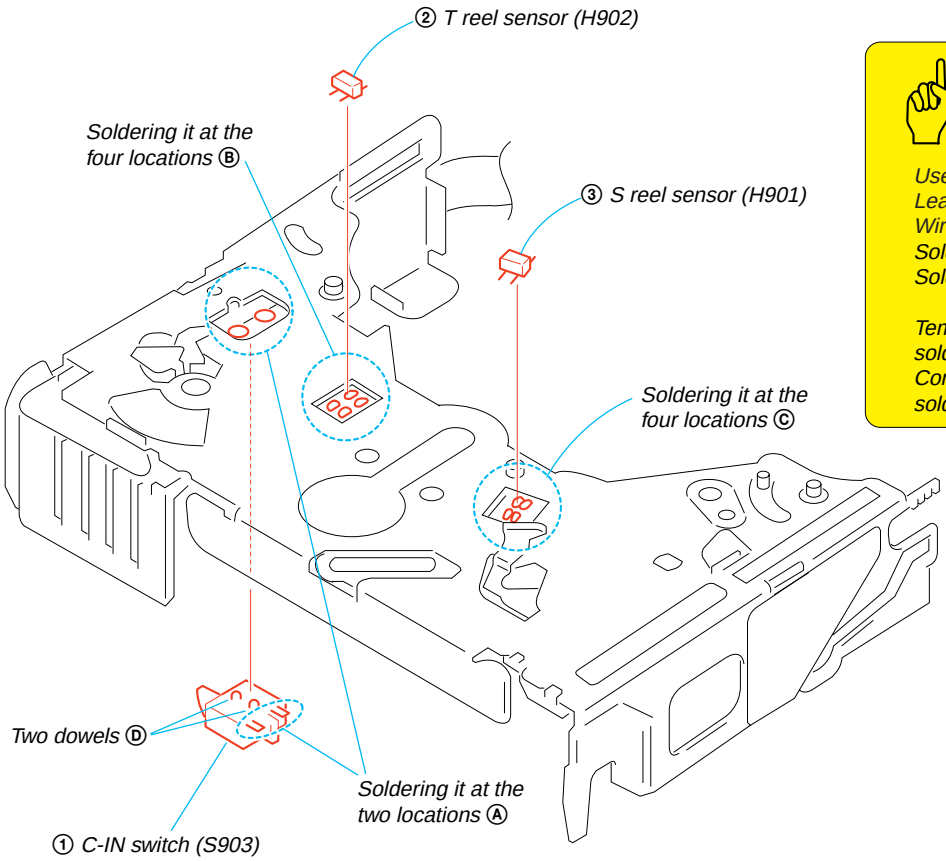
3-22. C-IN Switch (S903), S Reel Sensor (H901) and T Reel Sensor (H902)

1. Removal procedure

1) Remove soldering at the two locations Ⓐ and remove the C-IN switch (S903) ①.
2) Remove soldering at the four locations Ⓑ and remove the T reel sensor (H902) ②.
3) Remove soldering at the four locations Ⓑ and remove the S reel sensor (H901) ③.

2. Attachment procedure

1) Connect the S reel sensor (H901) ③ to the FP-468 flexible board by soldering it at the four locations Ⓒ.
2) Connect the T reel sensor (H902) ② to the FP-468 flexible board by soldering it at the four locations Ⓑ.
3) Align the two dowels Ⓓ and connect the C-IN switch (S903) ① to the FP-468 flexible board by soldering it at the two locations Ⓐ.


② T reel sensor (H902)
Soldering it at the four locations Ⓑ
③ S reel sensor (H901)
Soldering it at the four locations Ⓒ
Two dowels Ⓓ
Soldering it at the two locations Ⓐ
① C-IN switch (S903)

Soldering

Points to be noted

Use the rubber finger tip cover
Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC

Temperature of the soldering iron tip : 300 ± 10 °C
Contacting time of soldering iron tip : within 2 sec

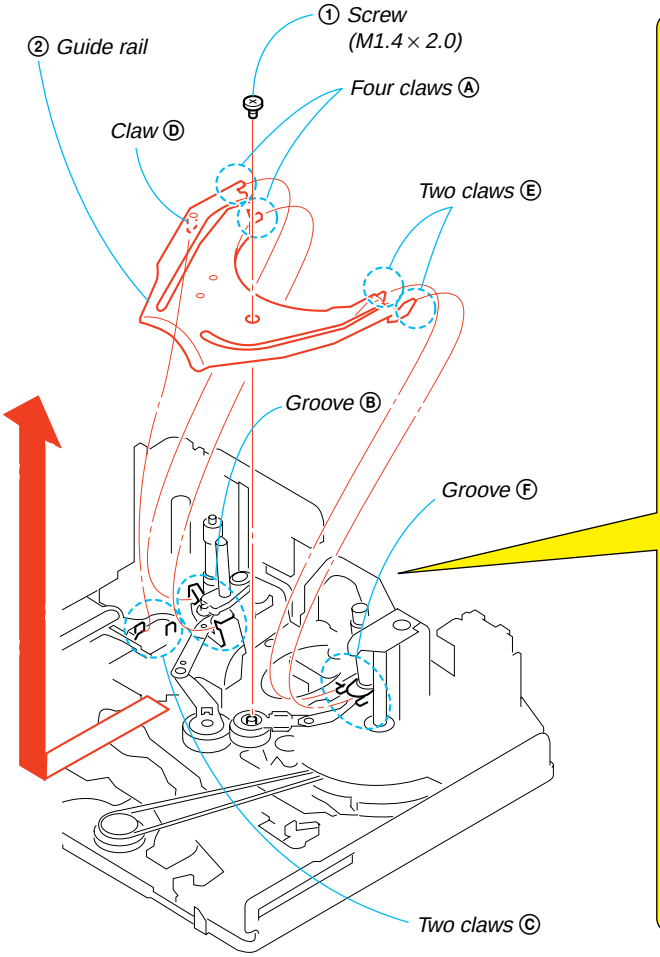
3-23. Guide Rail

1. Removal procedure

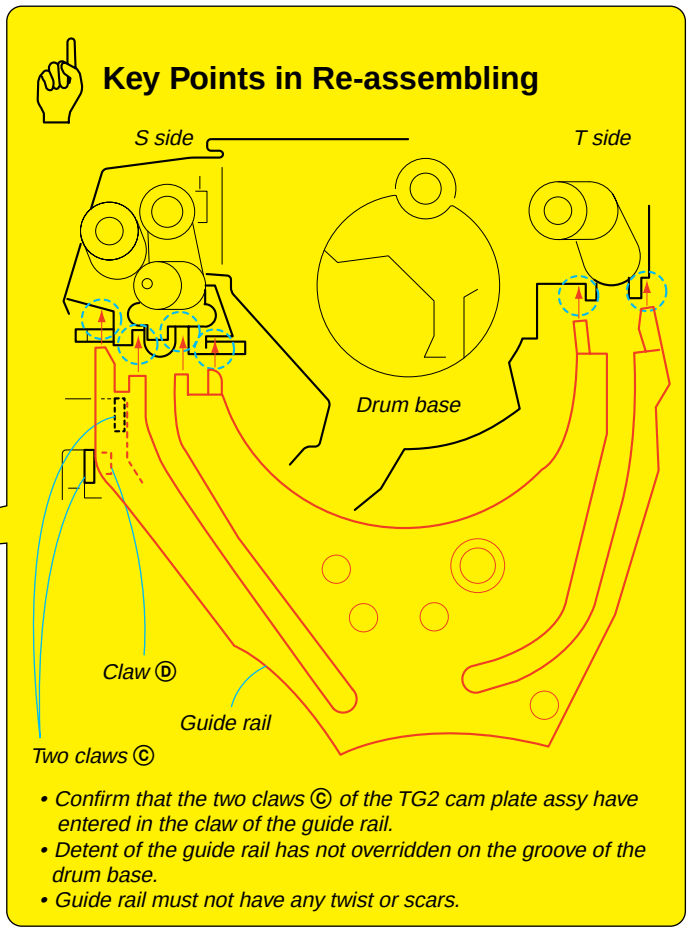
1) Remove the screw (special head screw M1.4 × 2.0) ①.
2) Remove the guide rail ② in the direction of the arrow.

2. Attachment procedure

1) Hold the center of the guide rail ②. While pressing the TG2 cam plate assy, insert the four claws Ⓐ of the guide rail in a slant angle from the top into the drum base's groove Ⓑ. (Insert the top tip of the rail at the same time.) Confirm at this time that the two claws of the TG cam plate assy have entered in the claw Ⓓ of the guide rail.
2) Insert the two claws Ⓔ of the T side guide rail into the groove Ⓕ of the drum base.
3) Tighten the screw (special head screw M1.4 × 2.0) ①.
Tightening torque: 0.059 ± 0.01N•m (0.6 ± 0.1kgf•cm)



GUIDE RAIL


Key Points in Re-assembling
S side
T side
Drum base
Claw Ⓓ
Guide rail
Two claws Ⓒ
• Confirm that the two claws Ⓒ of the TG2 cam plate assy have entered in the claw of the guide rail.
• Detent of the guide rail has not overridden on the groove of the drum base.
• Guide rail must not have any twist or scars.

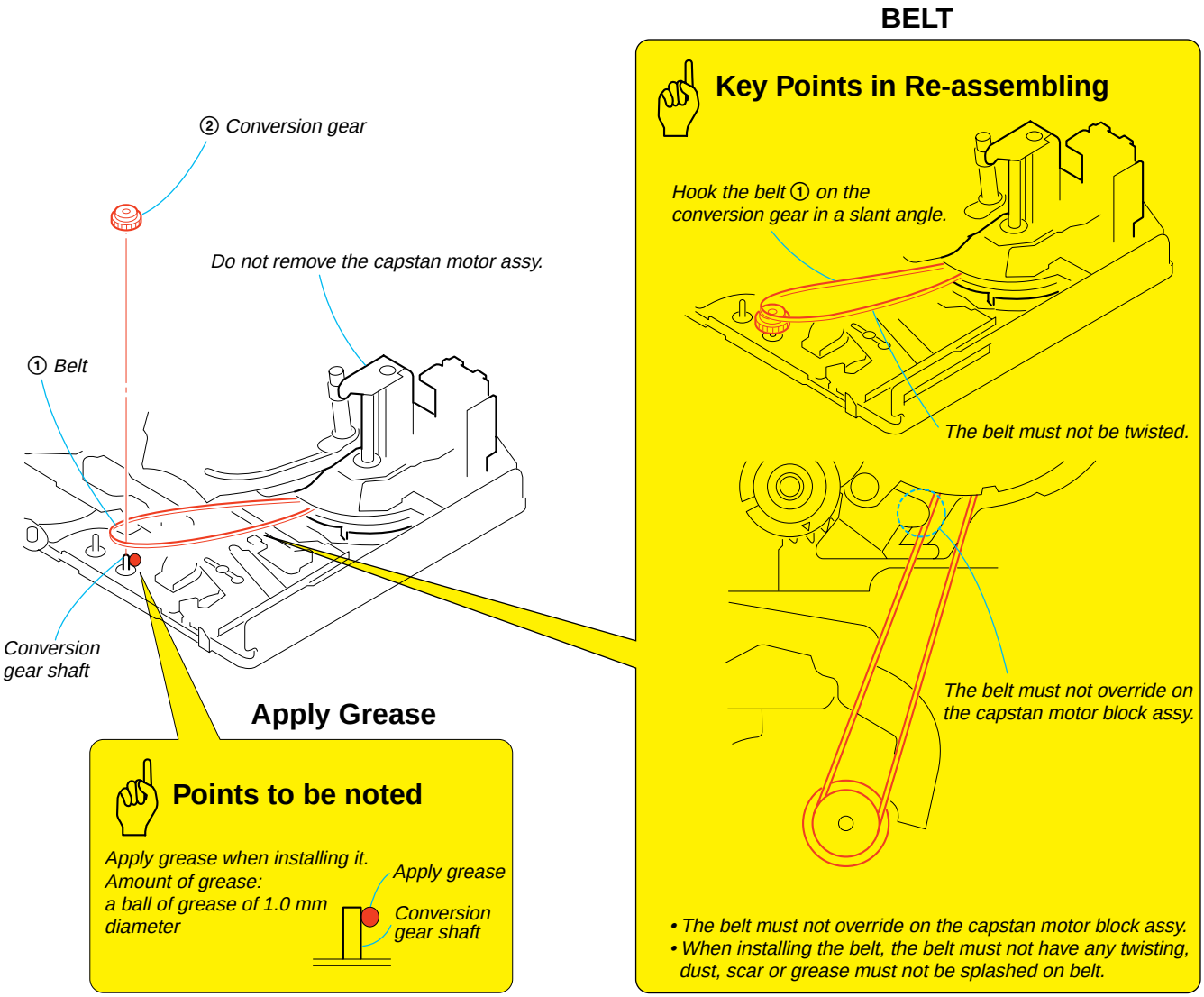
3-24. Conversion Gear

1. Removal procedure

1) Remove the belt ① from the conversion gear.
2) Remove the conversion gear ② from the conversion gear shaft.

2. Attachment procedure

1) Apply grease to the conversion gear shaft.
   Amount of grease: a ball of grease of 1.0 mm diameter
2) Install the conversion gear ② in the conversion gear shaft.
3) Hook the belt ① on the conversion gear in a slant angle and install it by rotating the conversion gear with fingertip.


② Conversion gear
Do not remove the capstan motor assy.
① Belt
Conversion gear shaft
Apply Grease
Points to be noted
Apply grease when installing it.
Amount of grease:
a ball of grease of 1.0 mm diameter
Apply grease
Conversion gear shaft
BELT
Key Points in Re-assembling
Hook the belt ① on the conversion gear in a slant angle.
The belt must not be twisted.
The belt must not override on the capstan motor block assy.
• The belt must not override on the capstan motor block assy.
• When installing the belt, the belt must not have any twisting, dust, scar or grease must not be splashed on belt.

3-25. Coaster (S) Block Assy and Coaster (T) Block Assy

1. Removal procedure

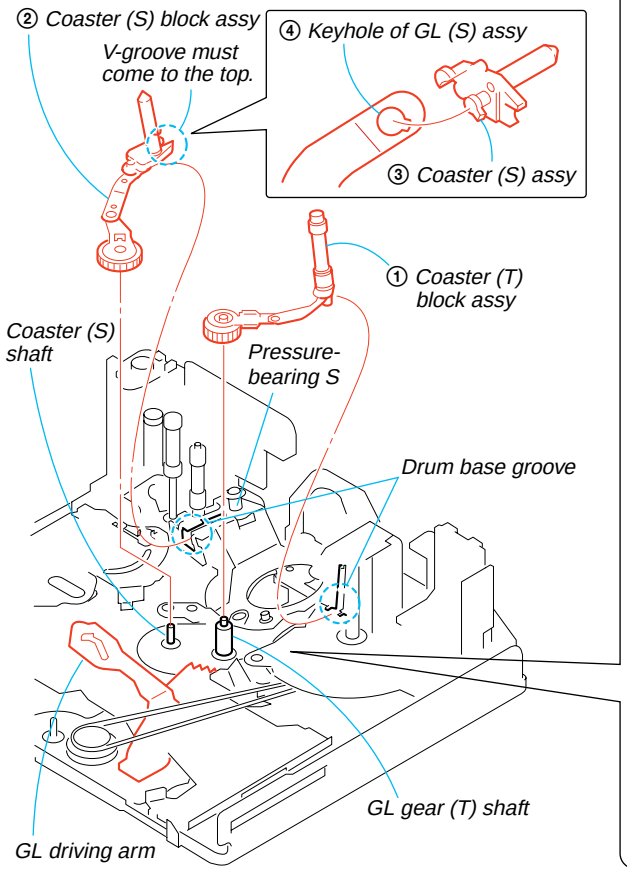
1) Remove the coaster (T) block assy ① from the coaster (T) block shaft. Remove the coaster (T) block assy from the right groove of the drum base.
2) Remove the coaster (S) block assy ② from the coaster (S) block shaft. Remove the coaster (S) block assy from the left groove of the drum base.
3) Remove coaster (S) assy ③ by rotating it through the key hole of GL (S) assy ④.

2. Attachment procedure

1) Install the coaster (S) assy ③ into the key hole of the GL (S) assy ④ by rotating it.
2) Insert the coaster (S) block assy ② into the coaster (S) block shaft. While aligning it with the left groove of the drum base, push it in the way that the V-groove comes to the top until it reaches the pressure-bearing S.
3) Push in the coaster (T) block assy ① along with the right groove of the drum base. Align the phase of the GL gear S, GL gear T and the GL drive arm at the three phasing locations. Then install the coaster (T) block assy ① in the coaster (T) block assy shaft.

Key Points in Re-assembling

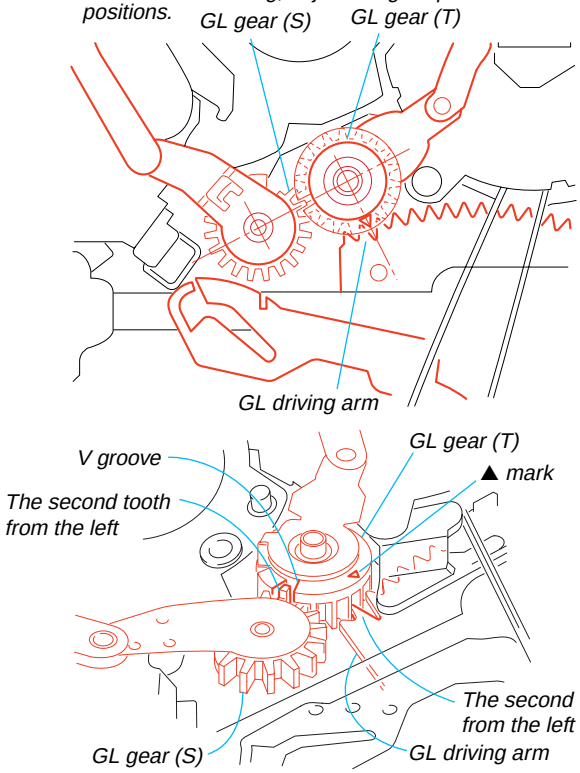
- *When aligning the coaster (S) assy with the left groove of the drum base, the V-groove must come to the top.*
- *TG4 and TG5 must not have any stain and their arms must not be deformed.*


② Coaster (S) block assy
V-groove must come to the top.
④ Keyhole of GL (S) assy
③ Coaster (S) assy
① Coaster (T) block assy
Coaster (S) shaft
Pressure-bearing S
Drum base groove
GL gear (T) shaft
GL driving arm

Phase Adjustment

Key Points in Re-assembling

When re-assembling, adjust the gear phase at the three positions.



- *The second tooth from the left of the GL gear (S) and the V-groove of the GL gear (T) must be in phase.*
- *The second tooth from the left of the GL drive arm and the ▲ mark must be in phase.*

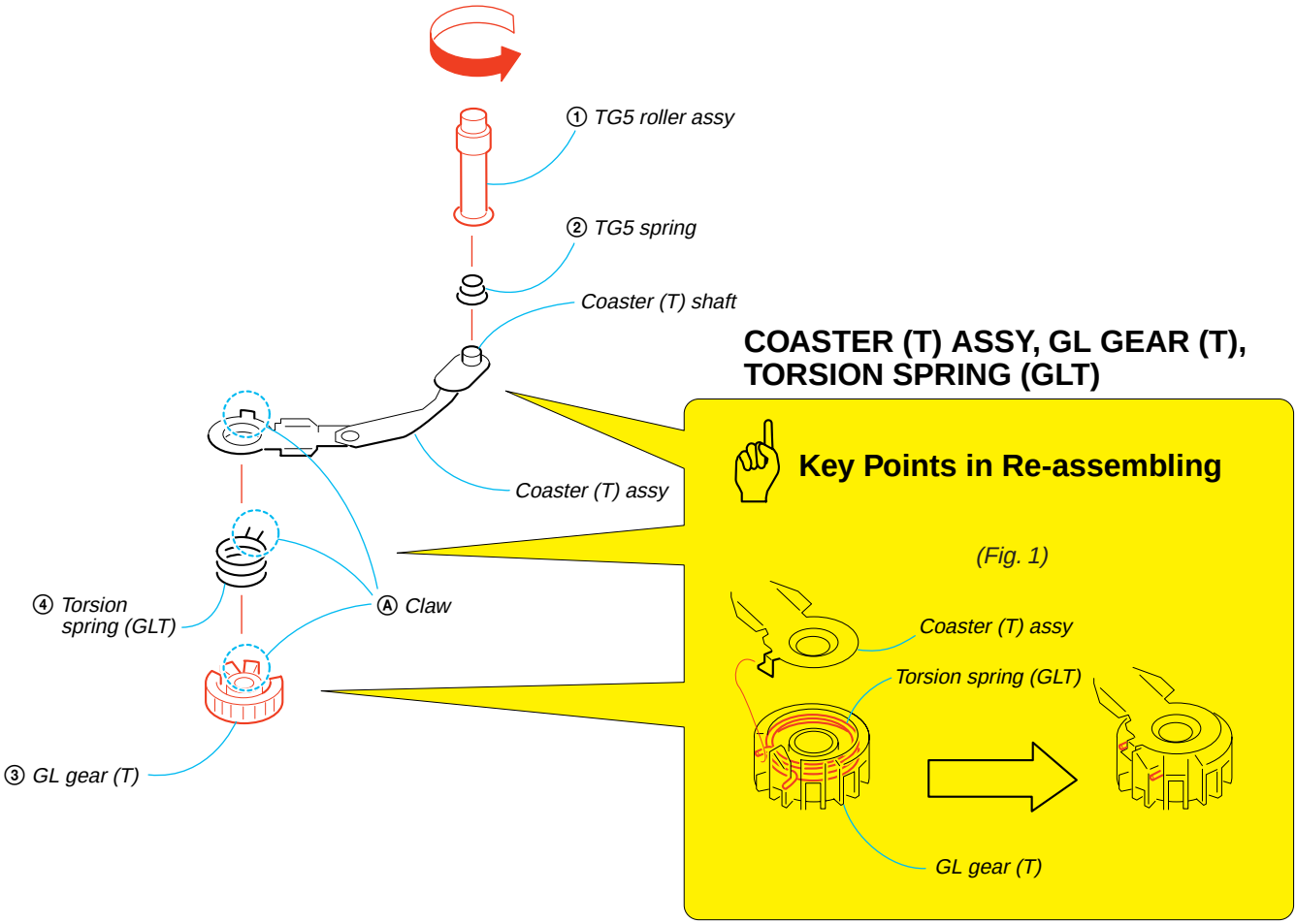
3-26. TG5 Roller Assy and GL Gear (T)

1. Removal procedure

1) Rotate the TG5 roller assy ① in the direction of the arrow and remove the TG5 roller assy ① and the TG5 spring ② from the coaster (T) assy.
2) Release the claw (A) and remove the GL gear (T) ③ and the torsion coil spring (GLT) ④ from the coaster (T) assy.

2. Attachment procedure

1) Install the GL gear (T) ③ and the torsion coil spring (GLT) ④ into the coaster (T) assy.
2) Install the TG5 spring ② into the coaster (T) assy.
3) Install the TG5 roller assy ① into the coaster (T) assy by rotating it in the direction opposite to the arrow.



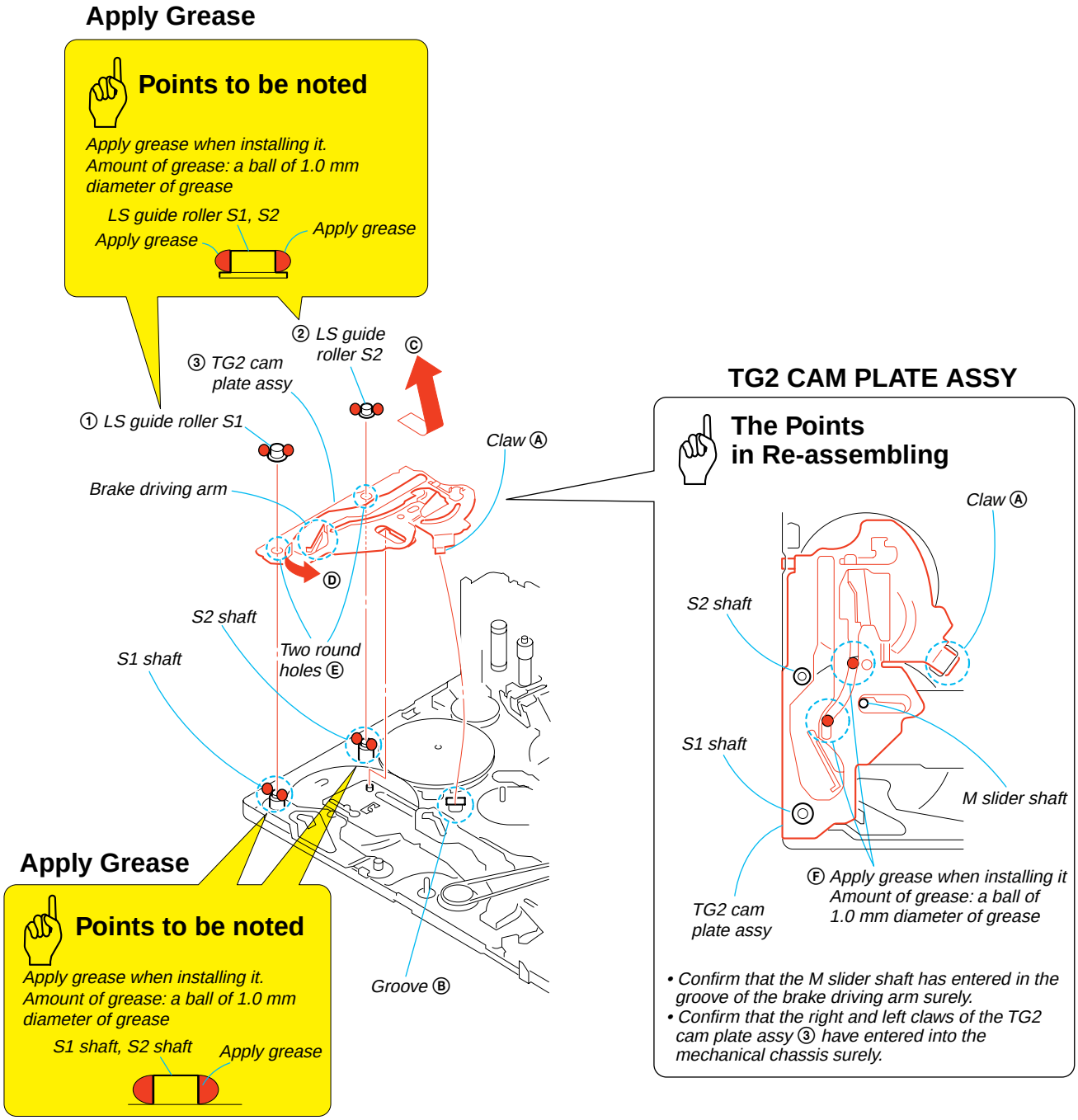
3-27. TG2 Cam Plate Assy

1. Removal procedure

1) Remove the LS guide roller (S1) ① from the S1 shaft.
2) Remove the LS guide roller (S2) ② from the S2 shaft.
3) Release the claw Ⓐ of the TG2 cam plate assy ③ from the right groove Ⓑ of the mechanical chassis.
4) Remove the TG2 cam plate assy ③ in the direction of the arrow Ⓒ.

2. Attachment procedure

1) Move the brake driving arm of the TG2 cam plate assy ③ in the direction of the arrow Ⓓ.
2) Insert the right claw Ⓐ of the TG2 cam plate assy ③ into the right groove Ⓑ of the mechanical chassis first.
3) Install the two round holes Ⓔ of the TG2 cam plate assy ③ into the S1 shaft and the S2 shaft.
4) Apply grease in the Ⓕ portion of the TG2 cam plate assy.
   Amount of grease: a ball of 1.0 mm diameter of grease
5) Apply grease to both sides of the S1 shaft and the S2 shaft.
   Amount of grease: a ball of 1.0 mm diameter of grease
6) Apply grease to both sides of the LS guide roller S1, S2.
7) Install the LS guide roller S1 ① in the S1 shaft.
8) Install the LS guide roller S2 ② in the S2 shaft.


Apply Grease
Points to be noted
Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease
LS guide roller S1, S2
Apply grease
Apply grease
② LS guide roller S2
Ⓒ
③ TG2 cam plate assy
① LS guide roller S1
Claw Ⓐ
Brake driving arm
Ⓓ
S2 shaft
S1 shaft
Two round holes Ⓔ
Groove Ⓑ
Apply Grease
Points to be noted
Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease
S1 shaft, S2 shaft
Apply grease
TG2 CAM PLATE ASSY
The Points in Re-assembling
Claw Ⓐ
S2 shaft
S1 shaft
M slider shaft
Ⓕ Apply grease when installing it
Amount of grease: a ball of 1.0 mm diameter of grease
TG2 cam plate assy
• Confirm that the M slider shaft has entered in the groove of the brake driving arm surely.
• Confirm that the right and left claws of the TG2 cam plate assy ③ have entered into the mechanical chassis surely.

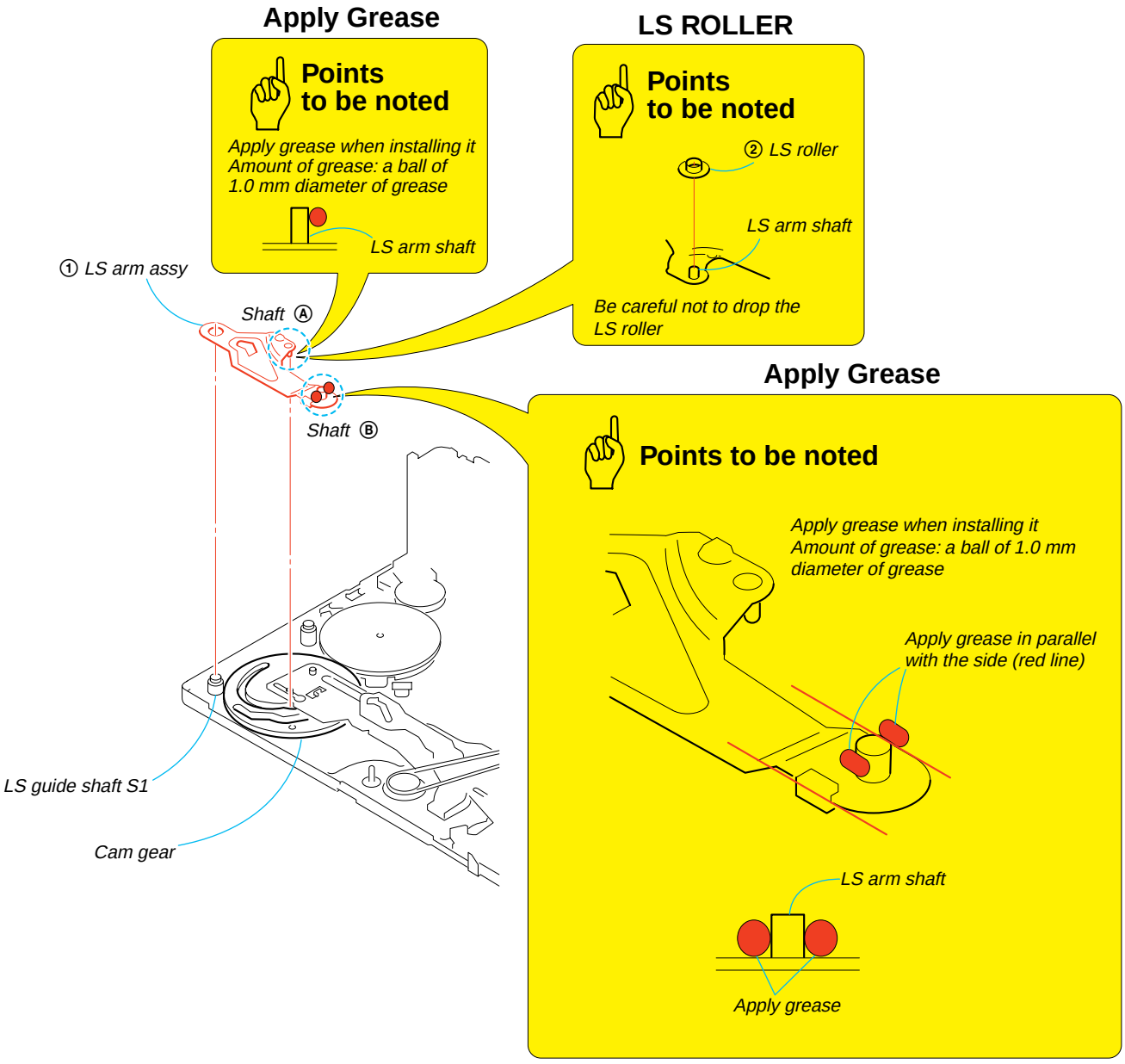
3-28. LS Arm Assy

1. Removal procedure

1) Remove the LS arm assy ① from the LS guide S1 shaft.
2) Turn over the LS arm assy and remove the LS roller ②.

2. Attachment procedure

1) Apply grease to the LS arm shaft Ⓐ (on the side).
2) Install the LS roller ② into the LS arm shaft.
3) Turn over the LS arm assy ① and install it while matching the phase of the LS guide shaft S1 and the cam gear groove.
4) Apply grease to the LS arm shaft Ⓑ (on its side).


Apply Grease
Points to be noted
Apply grease when installing it
Amount of grease: a ball of 1.0 mm diameter of grease
LS arm shaft
LS ROLLER
Points to be noted
② LS roller
LS arm shaft
Be careful not to drop the LS roller
① LS arm assy
Shaft Ⓐ
Shaft Ⓑ
Apply Grease
Points to be noted
Apply grease when installing it
Amount of grease: a ball of 1.0 mm diameter of grease
Apply grease in parallel with the side (red line)
LS arm shaft
Apply grease
LS guide shaft S1
Cam gear

3-29. M Slider Assy (1)

1. Removal procedure

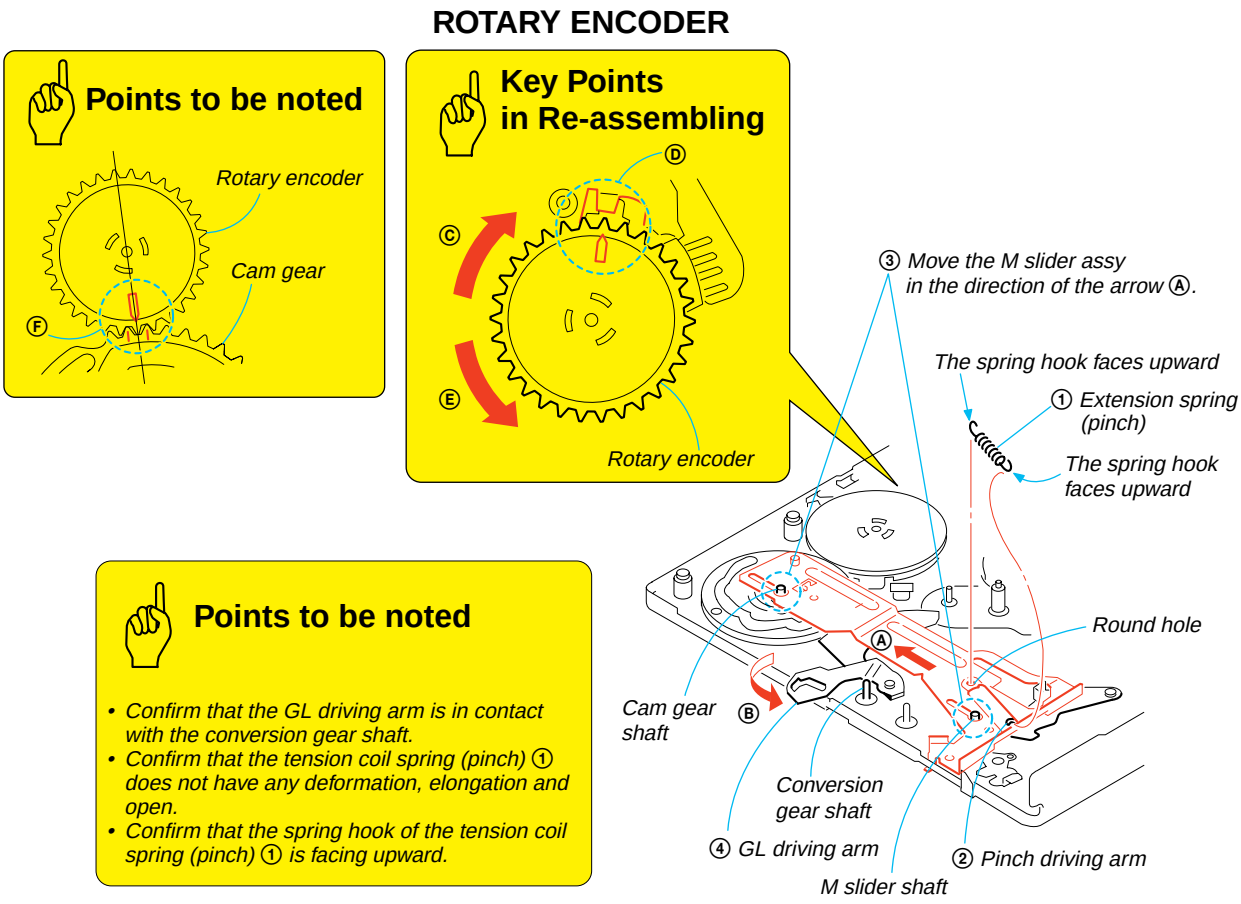
1) Remove an end of the tension spring (pinch) ① from the round hole of the M slider.
2) Remove another end of the tension spring (pinch) ① from the pinch driving arm ②.
3) Rotate the rotary encoder in the direction of the arrow Ⓔ, and align the ▲ mark of ratary encoder with the tooth bottom between second and third teeth Ⓕ. Move by hand in the direction of the arrow Ⓐ until the cam gear shaft and M slider shaft match with the shaft hole of the M slider assy ③.
4) Push in the direction of the arrow Ⓑ until the GL driving arm ④ gets in contact with the conversion gear shaft.

(to be continued to next items 5) through 7) on next page)

2. Attachment procedure

(continued from the previous items 1) through 5) on next page)

6) Move the conversion gear shaft in the direction opposite tot he arrow mark Ⓑ as far as it can go.
7) Rotate the rotary encoder in the direction of the arrow Ⓒ until the ▲ mark arrives at the position Ⓓ.
8) Install an end of the tension coil spring (pinch) ① on the pinch driving arm ② (in the way that spring hook faces upward).
9) Install another end of the tension coil spring (pinch) ① on the round hole of the M slider (in the way that spring hook faces upward).


ROTARY ENCODER
Points to be noted
Rotary encoder
Cam gear
Ⓕ
Key Points in Re-assembling
Ⓓ
Ⓒ
Ⓔ
Rotary encoder
③ Move the M slider assy in the direction of the arrow Ⓐ.
The spring hook faces upward
① Extension spring (pinch)
The spring hook faces upward
Round hole
Cam gear shaft
Ⓑ
Conversion gear shaft
④ GL driving arm
② Pinch driving arm
M slider shaft
Points to be noted
• Confirm that the GL driving arm is in contact with the conversion gear shaft.
• Confirm that the tension coil spring (pinch) ① does not have any deformation, elongation and open.
• Confirm that the spring hook of the tension coil spring (pinch) ① is facing upward.

3-30. M Slider Assy (2)

1. Removal procedure

(continued from the previous items 1) through 5) on previous page)

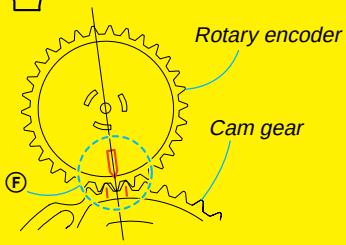
5) Remove the cam gear shaft and the M slider shaft from the two shaft holes Ⓐ of the M slider assy ①.
6) Remove the top tip Ⓑ of the M slider assy ① from the notch of the mechanical chassis in the direction of the arrow.
7) Remove the M slider assy ①.

2. Attachment procedure

1) Apply grease to the cam gear shaft and the M slider shaft (neck groove of the shaft where the M slider slides).
   Amount of grease: a ball of 1.0 mm diameter of grease
2) Align the hole of the pinch driving arm and the hole of the mechanical chassis.
3) Insert the top tip Ⓑ of the M slider assy ① into the notch of the mechanism chassis, and at the same time install the M slider assy ① into the GL driving arm.
4) Align the ▲ mark of rotary encoder with the tooth bottom between second and third teeth Ⓕ.
5) Install the cam gear shaft and the M slider shaft into the tow shaft holes Ⓐ of the M slider assy.

(to be continued to next items 6) through 9) on previous page)

Points to be noted



M SLIDER ASSY

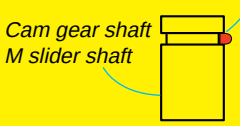
Key Points in Re-assembling

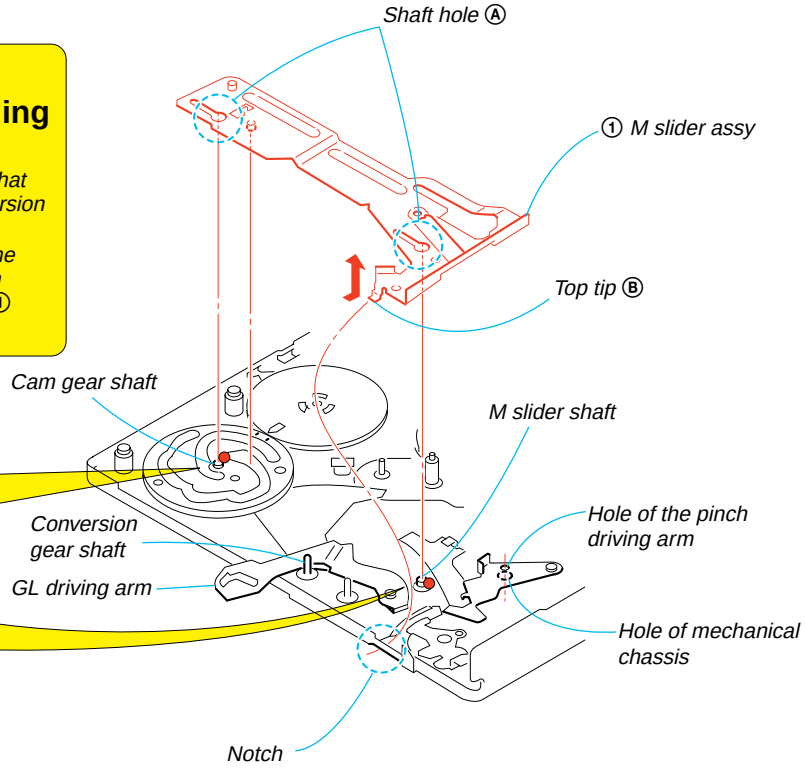
- *When installing the M slider assy ①, confirm that the GL driving arm is in contact with the conversion gear shaft.*
- *Confirm that you have not forgotten to insert the top tip Ⓑ of the M slider assy ① into the notch of the mechanical chassis. The M slider assy ① should not have any deformation.*

Apply Grease

Points to be noted

Apply grease when installing it
Amount of grease: a ball of 1.0 mm diameter of grease
Neck groove of the shaft where the M slider slides





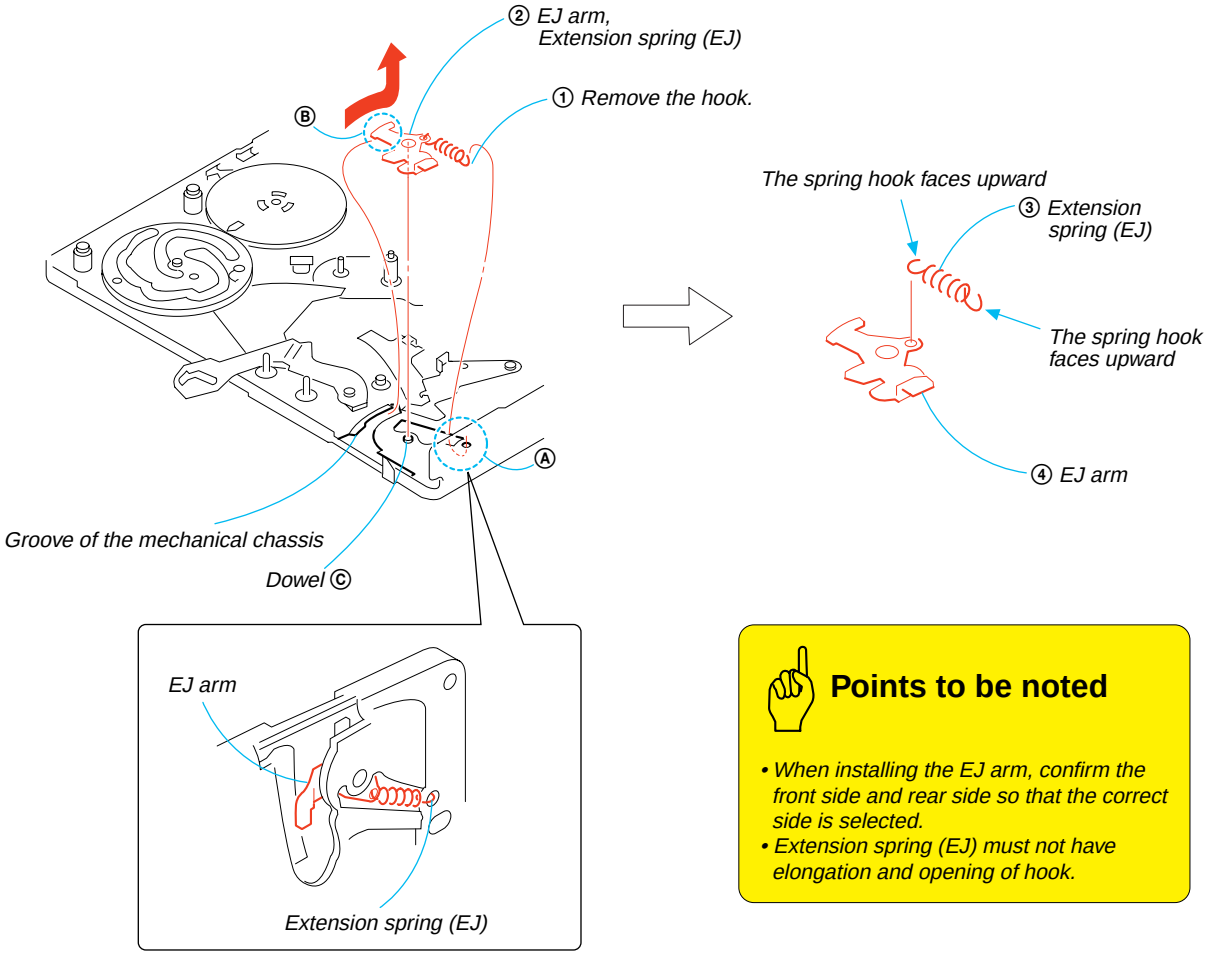
3-31. EJ Arm

1. Removal procedure

1) Remove the hook ① of the tension coil spring (EJ arm) ③ that is hooked on the round hole Ⓐ.
2) Remove the EJ arm and the tension coil spring (EJ arm) ② all together in the direction of the arrow.
3) Remove the tension coil spring (EJ arm) ③ from the EJ arm ④.

2. Attachment procedure

1) Install the tension coil spring (EJ arm) ③ into the round hole of the EJ arm ④ with the hook facing upward.
2) Insert the top tip (bent) portion Ⓑ of the EJ arm ④ into the groove of the mechanical chassis. Insert the dowel Ⓒ into the round hole of the EJ arm.
3) Insert he tension coil spring ① into the round hole Ⓐ of the mechanical chassis with the hook facing upward.



Points to be noted

- *When installing the EJ arm, confirm the front side and rear side so that the correct side is selected.*
- *Extension spring (EJ) must not have elongation and opening of hook.*

3-32. Cam Gear and GL Driving

1. Removal procedure

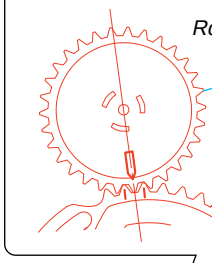
1) Rotate the GL driving arm Ⓗ block assy in the direction of the arrow Ⓘ until it contacts with the conversion gear shaft.
2) Remove the cam gear ②.
3) Remove the GL driving arm ③.

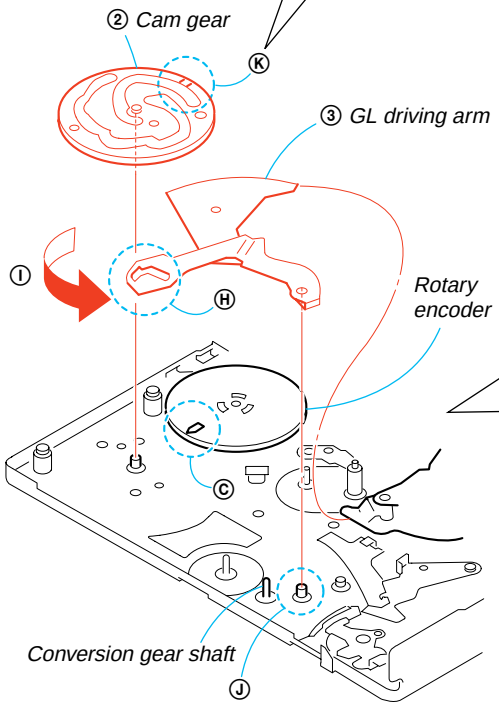
2. Attachment procedure

1) Insert the GL driving arm ③ into the shaft Ⓙ of the mechanical chassis and rotate the GL driving arm Ⓗ block assy in the direction of the arrow Ⓘ until it contacts with the conversion gear shaft.
2) Confirm the front side and rear side of the cam gear ② so that the correct side is selected. Install the cam gear ② while matching phase of the ▲ mark Ⓒ with the second tooth valley Ⓚ and the third tooth valley Ⓚ of the cam gear.
3) Apply grease to the specified locations Ⓐ to Ⓖ of the cam gear.

Matching Phase

Key Points in Re-assembling



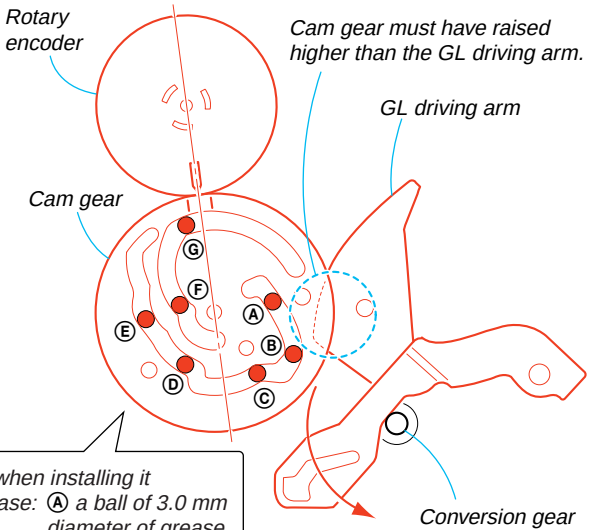


Points to be noted

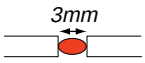
- *Confirm that the phase of the cam gear and that of the rotary encoder are matched and in phase.*
- *Confirm that the cam gear overrides on the GL driving arm.*
- *Confirm that the GL driving arm is contact with the conversion shaft.*
- *Do not apply grease to any locations other than the specified location. Apply grease of the specified amount.*

Notes When Applying Grease and During Installation

Key Points in Re-assembling



Apply grease when installing it
Amount of grease: Ⓐ a ball of 3.0 mm diameter of grease Ⓑ to Ⓖ a ball of 2.0 mm diameter of grease



Sides of the both grooves

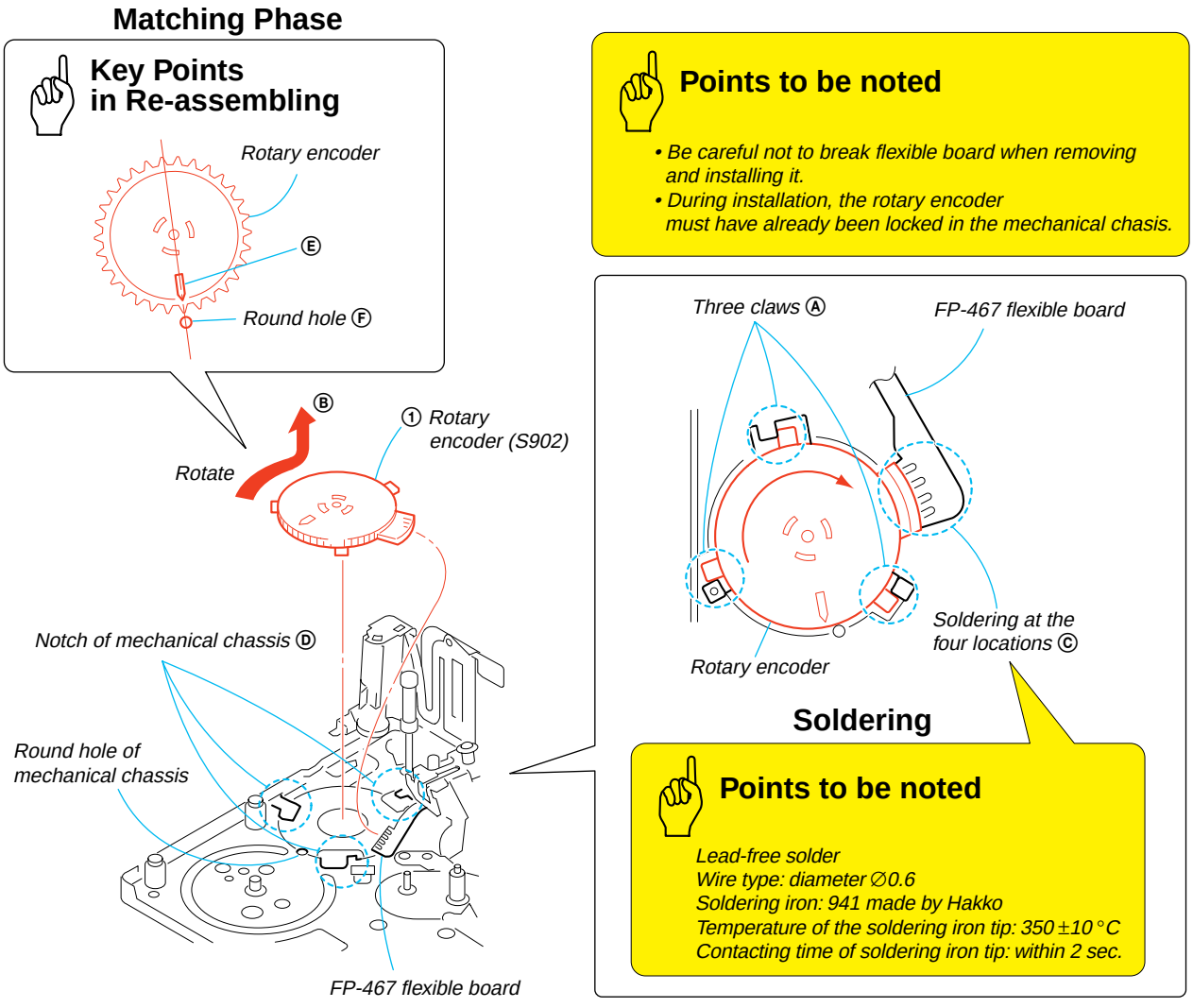
3-33. Rotary Encoder (S902)

1. Removal procedure

1) Remove the three claws Ⓐ of the rotary encoder (S902) ① from the three notches of the mechanical chassis.
2) Rotate the rotary encoder (S902) ① in the direction of the arrow Ⓑ and remove.
3) Remove soldering (at the four locations) Ⓒ to which the rotary encoder (S902) is attached.

2. Attachment procedure

1) Make soldering (at the four locations) Ⓒ so that the rotary encoder (S902) ① is connected to the FP-467 flexible board.
2) Place the rotary encoder (S902) ① on top of the notch Ⓓ of the mechanical chassis. Lock the three claws Ⓐ of the rotary encoder (S902) ① into the notches Ⓓ of the mechanical chassis.
3) Match the phase of the ▲ mark Ⓔ of the rotary encoder (S902) ① with the phase of the round hole Ⓕ of the mechanical chassis.


Matching Phase
Key Points in Re-assembling
Rotary encoder
Ⓔ
Round hole Ⓕ
Ⓑ
① Rotary encoder (S902)
Rotate
Notch of mechanical chassis Ⓓ
Round hole of mechanical chassis
FP-467 flexible board
Points to be noted
• Be careful not to break flexible board when removing and installing it.
• During installation, the rotary encoder must have already been locked in the mechanical chasis.
Three claws Ⓐ
FP-467 flexible board
Soldering at the four locations Ⓒ
Rotary encoder
Soldering
Points to be noted
Lead-free solder
Wire type: diameter ∅0.6
Soldering iron: 941 made by Hakko
Temperature of the soldering iron tip: 350 ±10 °C
Contacting time of soldering iron tip: within 2 sec.

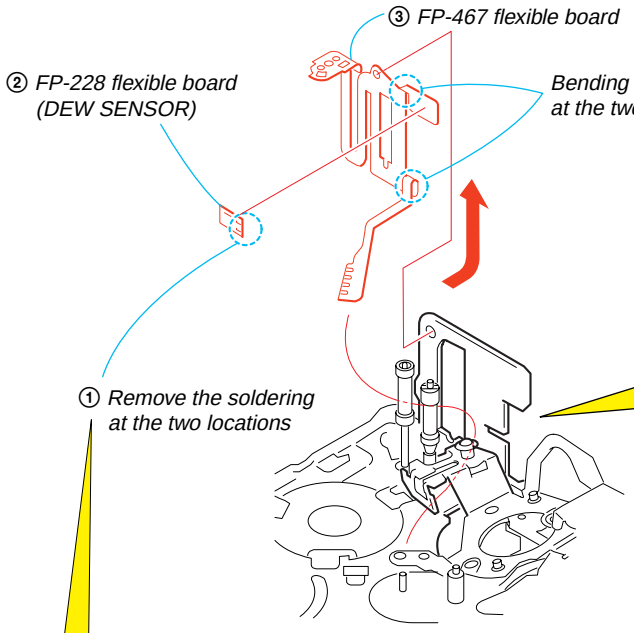
3-34. FP-228 Flexible Board (DEW SENSOR) and FP-467 Flexible Board

1. Removal procedure

1) Remove the soldering at the two locations ① and remove the FP-228 flexible board (DEW SENSOR) ②.
2) Remove the FP-467 flexible board ③ from the mechanical chassis in the direction of the arrow.

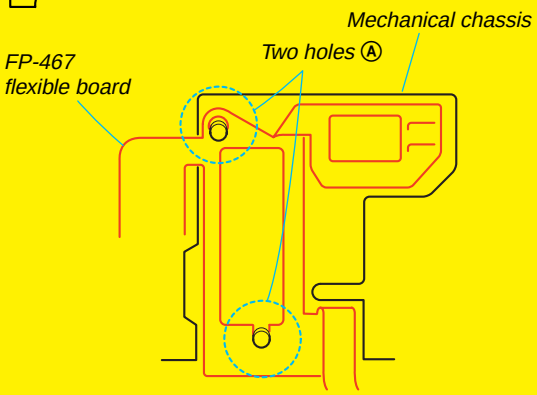
2. Attachment procedure

1) Match the phase of the two holes Ⓐ of the FP-467 flexible board ③ with the holes of the mechanical chassis, and attach them each other.
2) Attach the FP-228 flexible board (DEW SENSOR) ② to the FP-467 flexible board ③.
3) Connect the terminals at the two locations ① by soldering.


③ FP-467 flexible board
② FP-228 flexible board (DEW SENSOR)
Bending the flexible board at the two locations
① Remove the soldering at the two locations

FP-467 FLEXIBLE BOARD

Key Points in Re-assembling



Soldering

Points to be noted

Lead-free solder
Temperature of the soldering iron tip: 350 °C
Contacting time of soldering iron tip: within 2 sec.

- *Be careful not to create the hollow soldering, Br, and there must be no lacking of parts. There must not be solder ball.*
- *Be careful not to contact the soldering iron tip too long time.*

Points to be noted

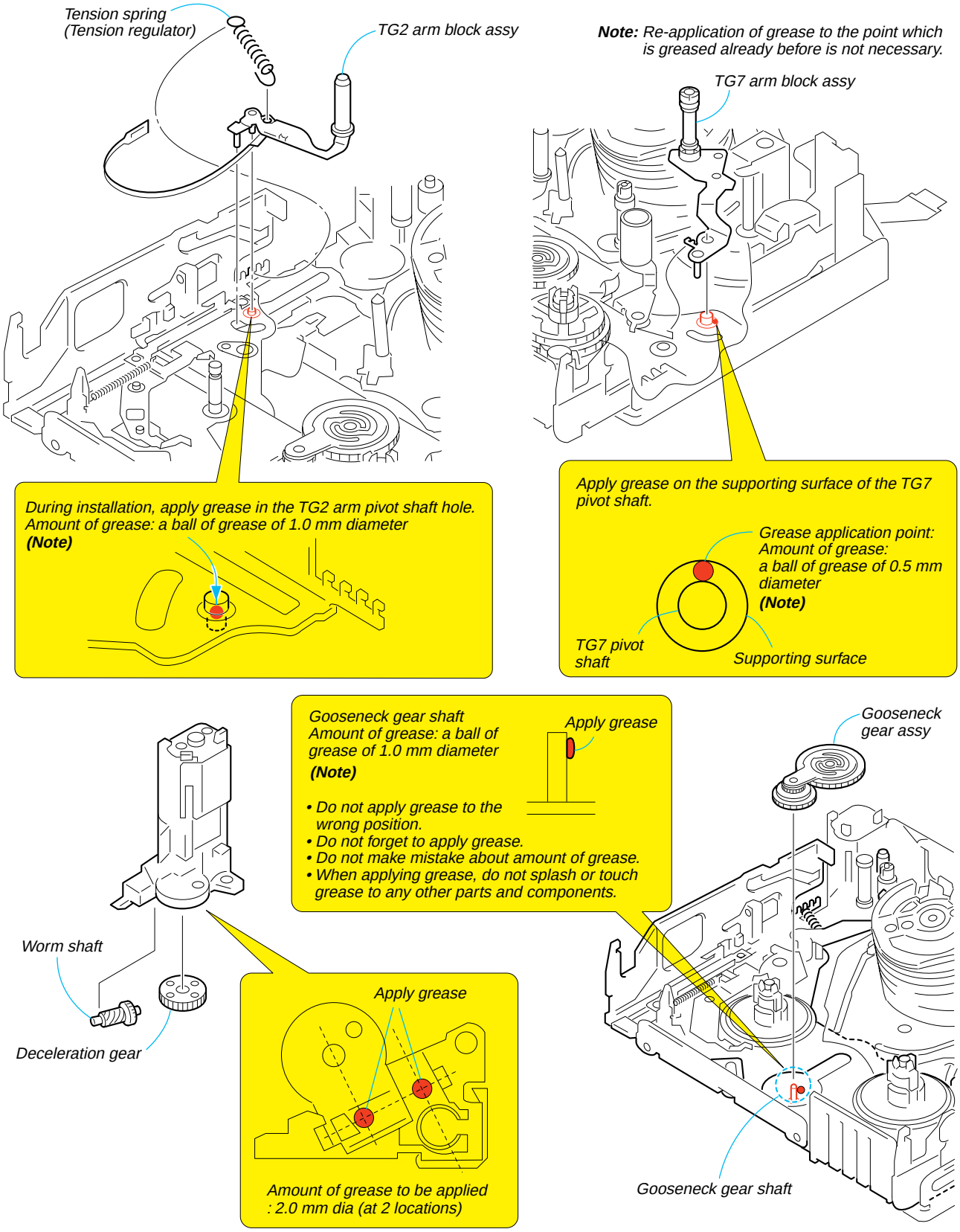
- *Be careful not to break the flexible board to have open circuit when installing and removing it.*
- *Be careful that flexible board must not override on anything.*
- *Be careful that the two bending portions of the FP-467 flexible board must not be bent excessively that results in open circuit and breakdown of flexible board.*
- *Do not rub the DEW sensor with any rubbing bars.*

2003.01.30

HELP

Application of grease, soldering method and precautions, and phase matching adjustment are compiled and below.

Apply grease (1)

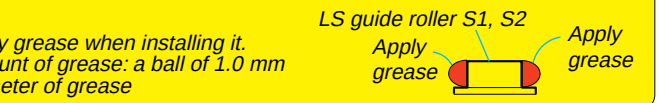

Tension spring
(Tension regulator)
TG2 arm block assy
Note: Re-application of grease to the point which is greased already before is not necessary.
TG7 arm block assy
During installation, apply grease in the TG2 arm pivot shaft hole.
Amount of grease: a ball of grease of 1.0 mm diameter
(Note)
Apply grease on the supporting surface of the TG7 pivot shaft.
Grease application point:
Amount of grease:
a ball of grease of 0.5 mm diameter
(Note)
TG7 pivot shaft
Supporting surface
Gooseneck gear shaft
Amount of grease: a ball of grease of 1.0 mm diameter
(Note)
Apply grease
• Do not apply grease to the wrong position.
• Do not forget to apply grease.
• Do not make mistake about amount of grease.
• When applying grease, do not splash or touch grease to any other parts and components.
Gooseneck gear assy
Worm shaft
Deceleration gear
Apply grease
Amount of grease to be applied
: 2.0 mm dia (at 2 locations)
Gooseneck gear shaft

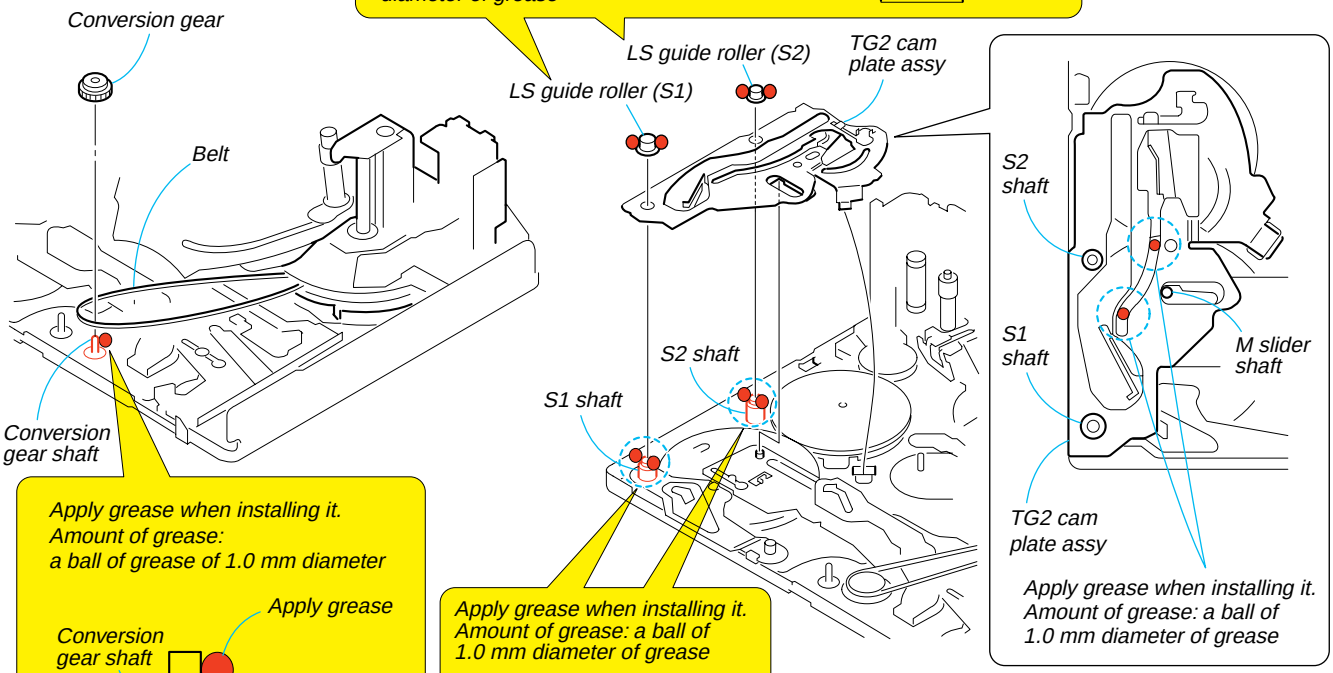
Apply grease (2)

Apply Grease

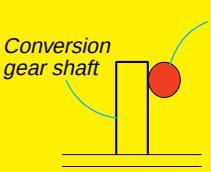
Points to be noted

Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease



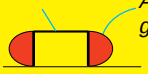


Apply grease when installing it.
Amount of grease:
a ball of grease of 1.0 mm diameter



Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease

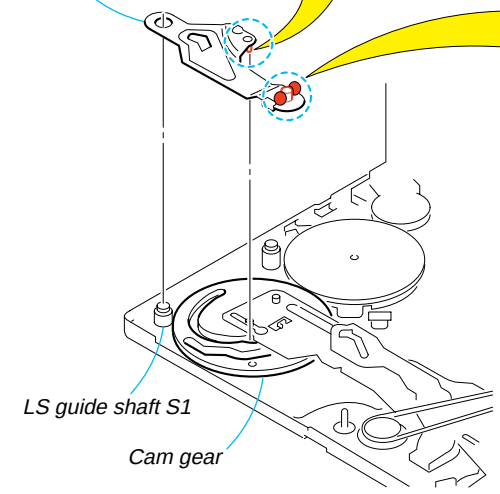
S1 shaft, S2 shaft



Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease

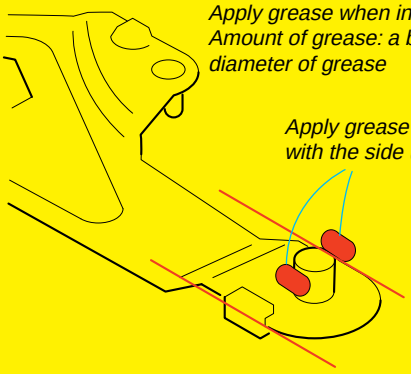
Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease

LS arm shaft

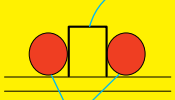


Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease

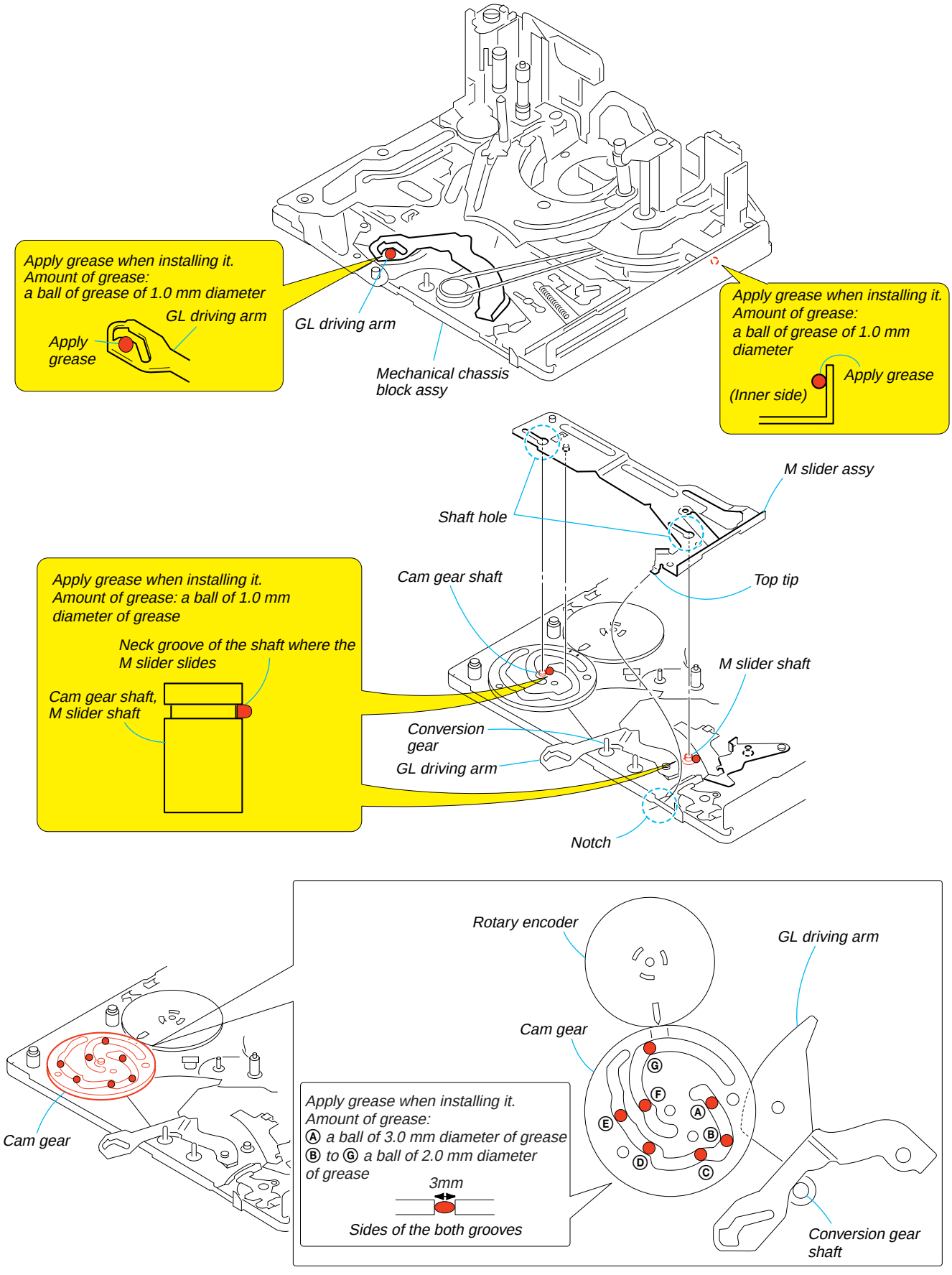
Apply grease in parallel with the side (red line)



LS arm shaft



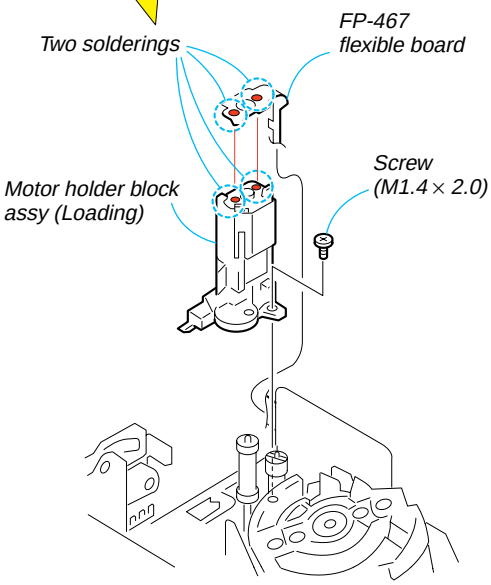
Apply grease (3)

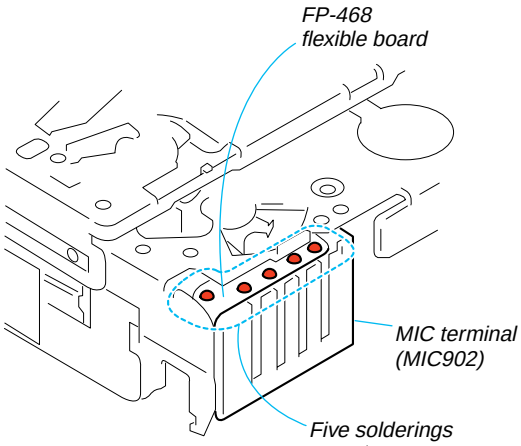

Apply grease when installing it.
Amount of grease:
a ball of grease of 1.0 mm diameter
GL driving arm
Apply grease
GL driving arm
Mechanical chassis block assy
Apply grease when installing it.
Amount of grease:
a ball of grease of 1.0 mm diameter
Apply grease
(Inner side)
M slider assy
Shaft hole
Top tip
Cam gear shaft
M slider shaft
Apply grease when installing it.
Amount of grease: a ball of 1.0 mm diameter of grease
Neck groove of the shaft where the M slider slides
Cam gear shaft, M slider shaft
Conversion gear
GL driving arm
Notch
Rotary encoder
GL driving arm
Cam gear
Cam gear
Apply grease when installing it.
Amount of grease:
Ⓐ a ball of 3.0 mm diameter of grease
Ⓑ to Ⓖ a ball of 2.0 mm diameter of grease
3mm
Sides of the both grooves
Conversion gear shaft

Soldering (1)

Lead-free solder
Wire type : ∅0.6
Temperature of the soldering iron tip : 320 °C
Contacting time of soldering iron tip : within 2 sec.

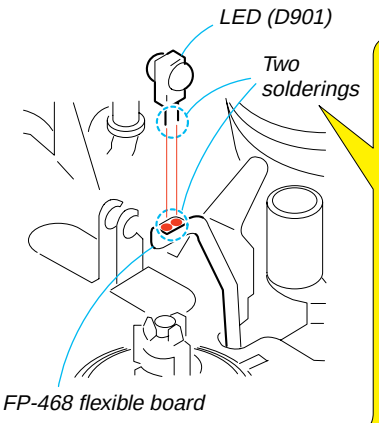
- Be careful not to create the hollow soldering, Br, and there must be no lacking of parts.
- Be careful not to melt the detent of the holder.
- Be careful not to melt the END cover.
- Be careful not to break the terminals due to attaching the soldering iron too long time.



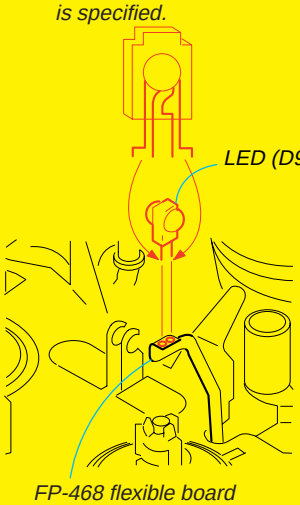


Use the rubber finger tip cover
Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC

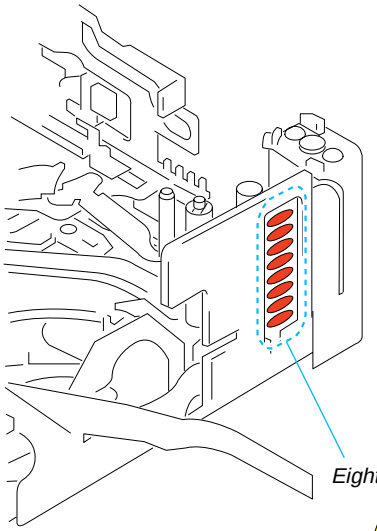
Temperature of the soldering iron tip : 300 ±10 °C
Contacting time of soldering iron tip : within 2 sec



Direction of the terminal is specified.



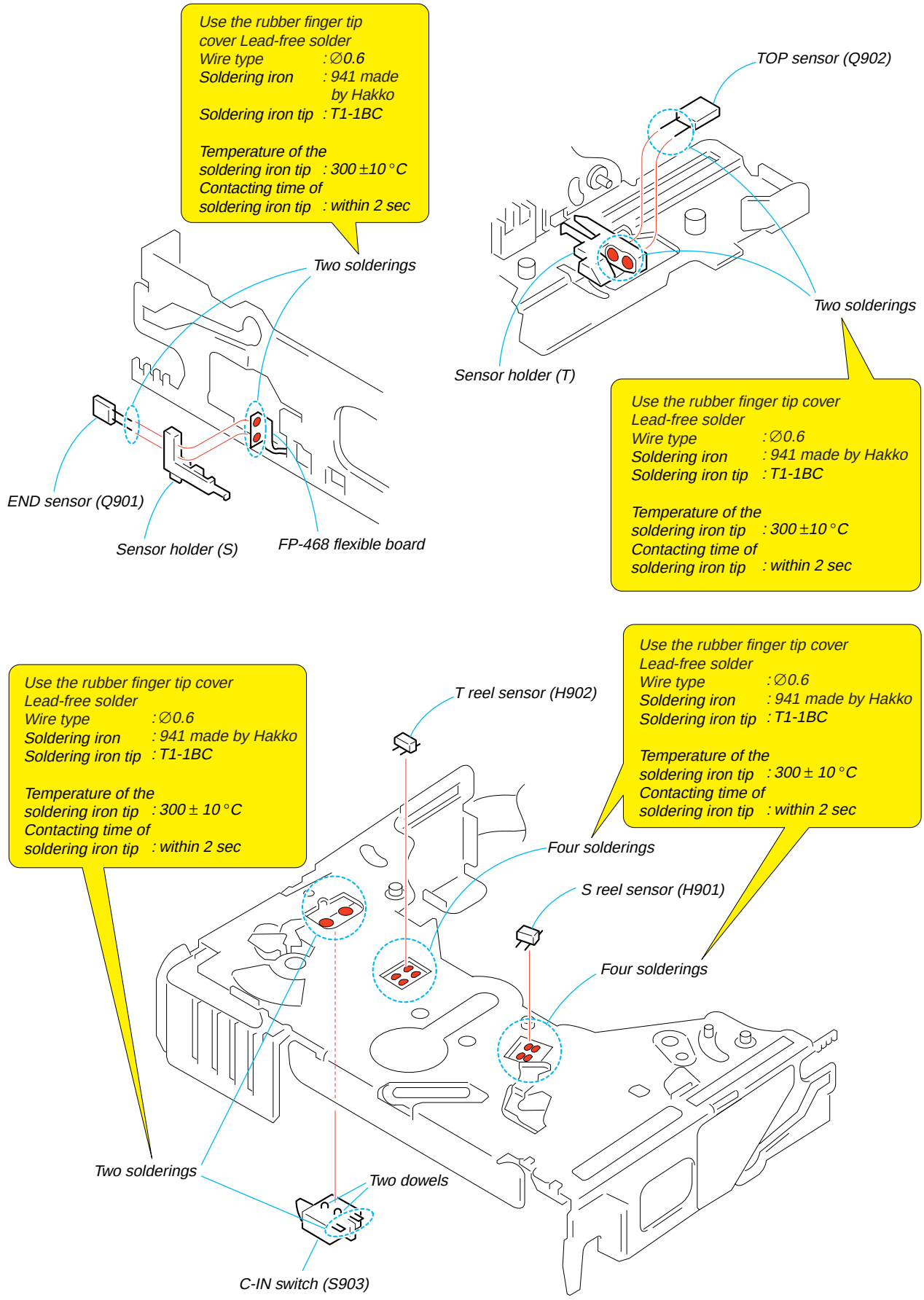
Rubber finger tip protection cover must be used.
Lead-free solder
Wire type: diameter ∅0.6
Soldering iron: 941 made by Hakko
Soldering iron tip: T1-1BC
Temperature of the soldering iron tip: 300 ±10 °C
Contacting time of soldering iron tip: within 2 sec.



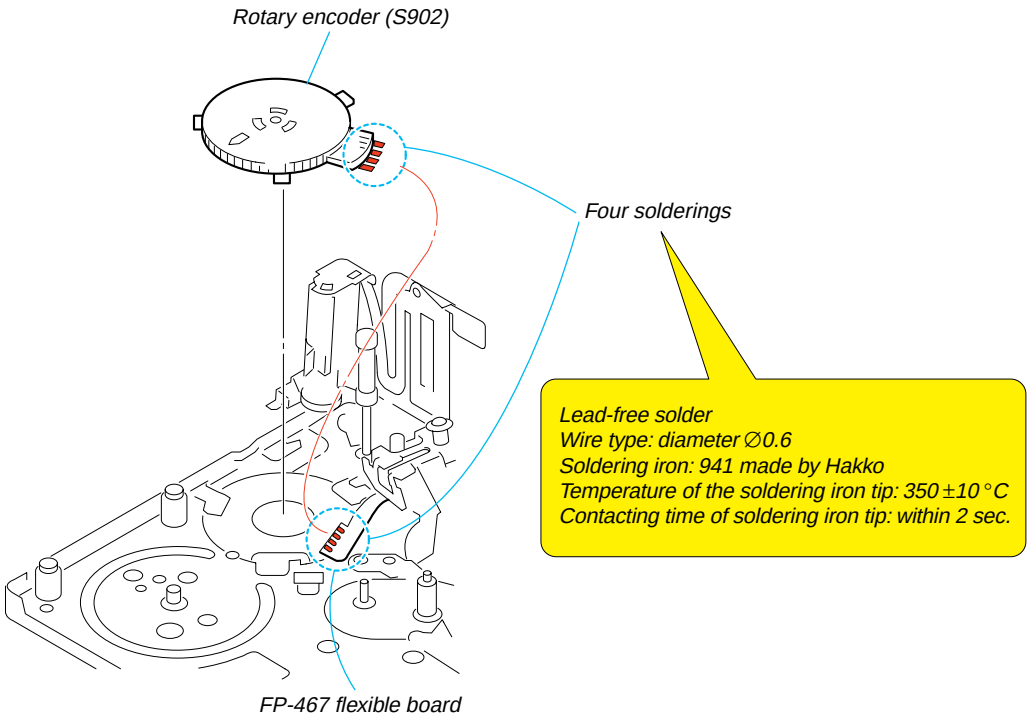
Lead-free solder
Wire type: diameter 0.6 ∅
Temperature of the soldering iron tip: 350 °C
Contacting time of soldering iron tip: within 2 sec.

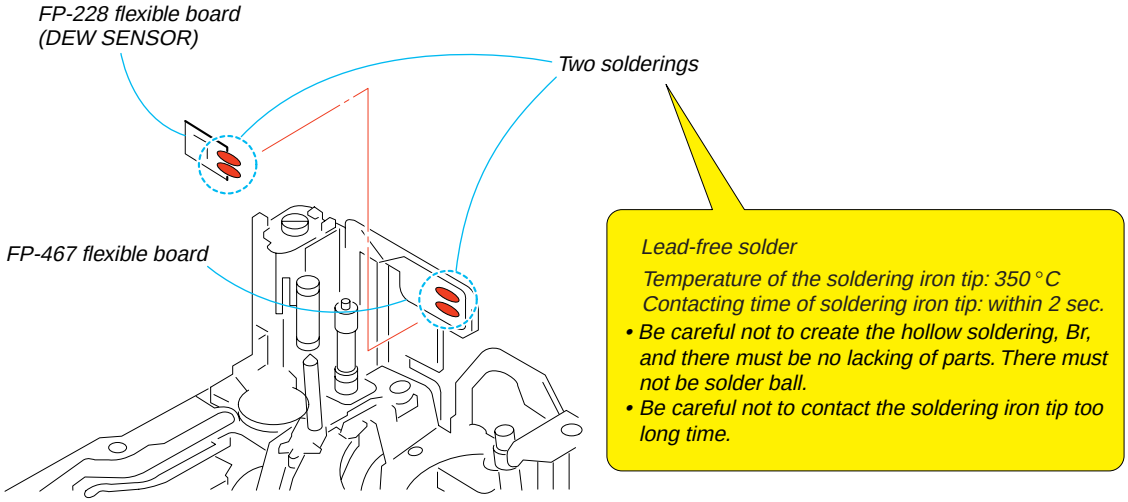
- Be careful not to create the hollow soldering, Br, and there must be no lacking of parts.
- Be careful not to crash the grip jog to the TG1 guide.

Soldering (2)

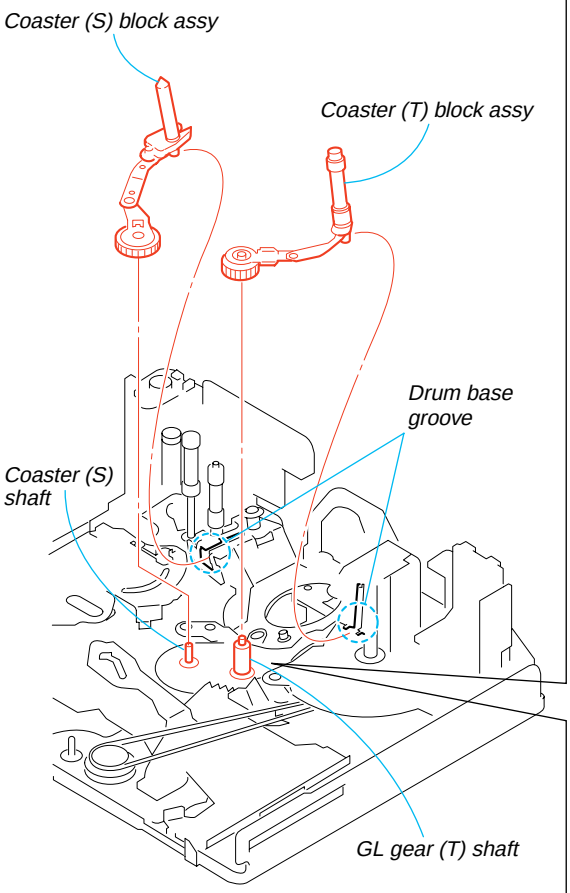

Use the rubber finger tip cover Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC
Temperature of the soldering iron tip : 300 ±10 °C
Contacting time of soldering iron tip : within 2 sec
Two solderings
END sensor (Q901)
Sensor holder (S)
FP-468 flexible board
TOP sensor (Q902)
Two solderings
Sensor holder (T)
Use the rubber finger tip cover Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC
Temperature of the soldering iron tip : 300 ±10 °C
Contacting time of soldering iron tip : within 2 sec
Use the rubber finger tip cover Lead-free solder
Wire type : ∅0.6
Soldering iron : 941 made by Hakko
Soldering iron tip : T1-1BC
Temperature of the soldering iron tip : 300 ± 10 °C
Contacting time of soldering iron tip : within 2 sec
T reel sensor (H902)
Four solderings
S reel sensor (H901)
Four solderings
Two solderings
Two dowels
C-IN switch (S903)

Soldering (3)

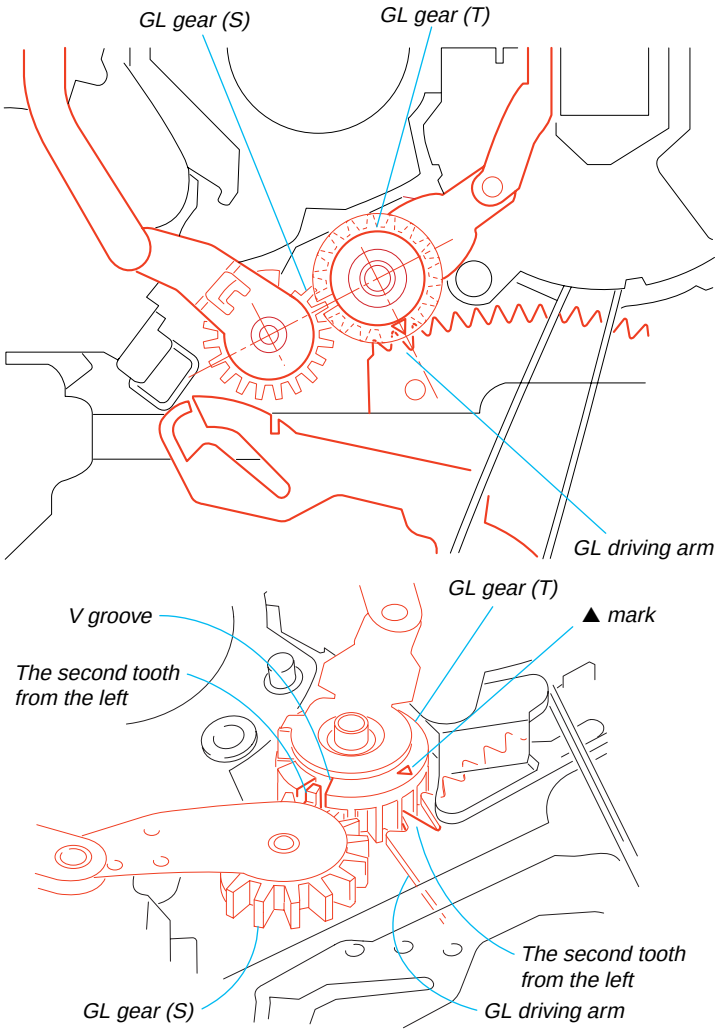

Rotary encoder (S902)
Four solderings
Lead-free solder
Wire type: diameter ∅0.6
Soldering iron: 941 made by Hakko
Temperature of the soldering iron tip: 350 ±10 °C
Contacting time of soldering iron tip: within 2 sec.
FP-467 flexible board


FP-228 flexible board
(DEW SENSOR)
Two solderings
FP-467 flexible board
Lead-free solder
Temperature of the soldering iron tip: 350 °C
Contacting time of soldering iron tip: within 2 sec.
• Be careful not to create the hollow soldering, Br, and there must be no lacking of parts. There must not be solder ball.
• Be careful not to contact the soldering iron tip too long time.

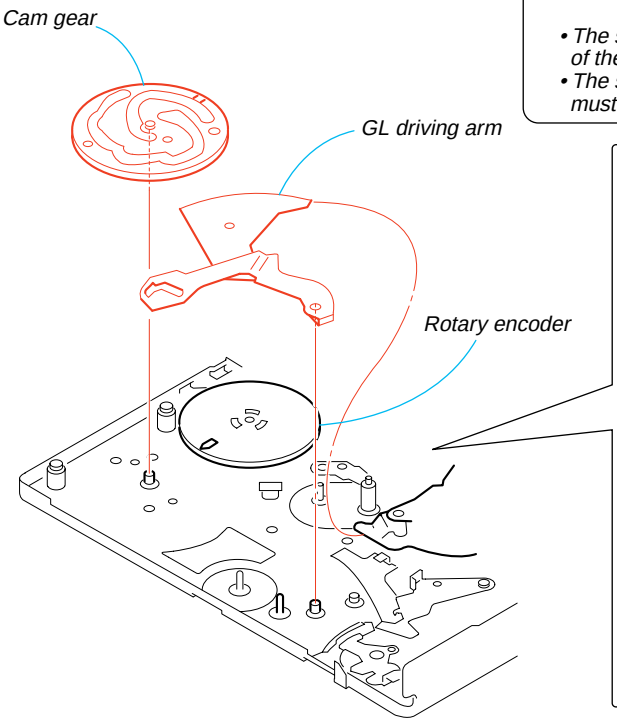
Matching Phase

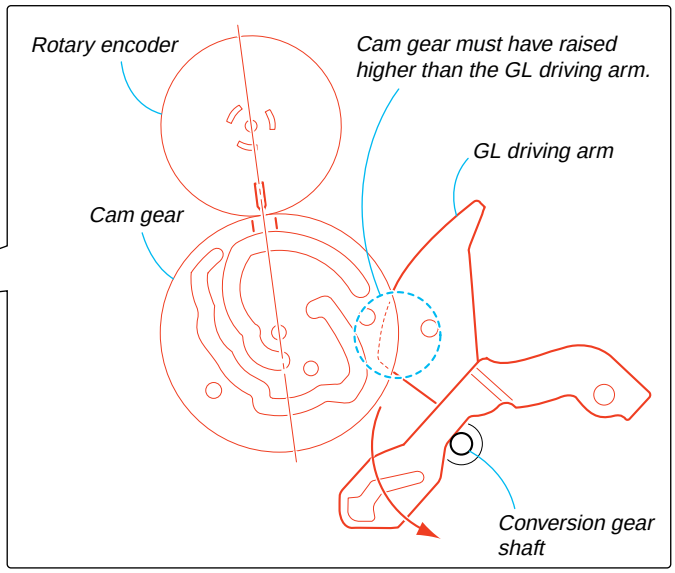


When re-assembling, adjust the gear phase at the three positions.



- The second tooth from the left of the GL gear (S) and the V-groove of the GL gear (T) must be in phase.
- The second tooth from the left of the GL drive arm and the ▲ mark must be in phase.





4. Adjustment

4-1. FWD Position Adjustment

When the TG2 arm block assy or the band adjuster or the S reel table assy is replaced or removed, the following adjustment becomes necessary.

- TG2 FWD Position Adjustment (Refer to section 4-4.)
- FWD Back Tension Adjustment (Refer to section 4-4.)
- Reel Table (RVS) Check (Refer to section 4-2.)

1) Set the R/P mode and check the TG2 guide position as follows.
   - Confirm that the distance between the TG2 guide and the L motor is 1.0 mm. If not, perform adjustment as follows.
2) Loosen the fixing screw. Use the adjustment screwdriver (Ref No. J-8) and adjust the band adjuster for the distance of 1.0 mm between the TG2 guide and the L motor. Upon completion of adjustment, tighten the fixing screw securely as follows.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 ± 0.1 kgf•cm)
   Note: Upon completion of adjustment, confirm that TG2 can move with some margin in the direction of the arrow Ⓐ.

4-2. Reel Torque Check

1. Check Procedure

[FWD torque]

1) Set the mini DV torque cassette (Ref. No. J-6).
2) Establish the FWD mode. Confirm that the center value of the T reel table torque value is in the range of 0.49 to 0.93 (mN•m) (5.0 to 9.5 g•cm) within deviation of 0.39 (mN•m) (4.0 g•cm)

[RVS torque]

1) Set the mini DV torque cassette (Ref. No. J-6).
2) Establish the RVS mode. Confirm that the center value of the S reel table torque value is in the range of 1.57 to 2.45 (mN•m) (16.0 to 25.0 g•cm)

If the above specification is not satisfied, check the tension regulator band for correct operation. If operation of the tension regulator band has no problem, replace the respective reel tables.

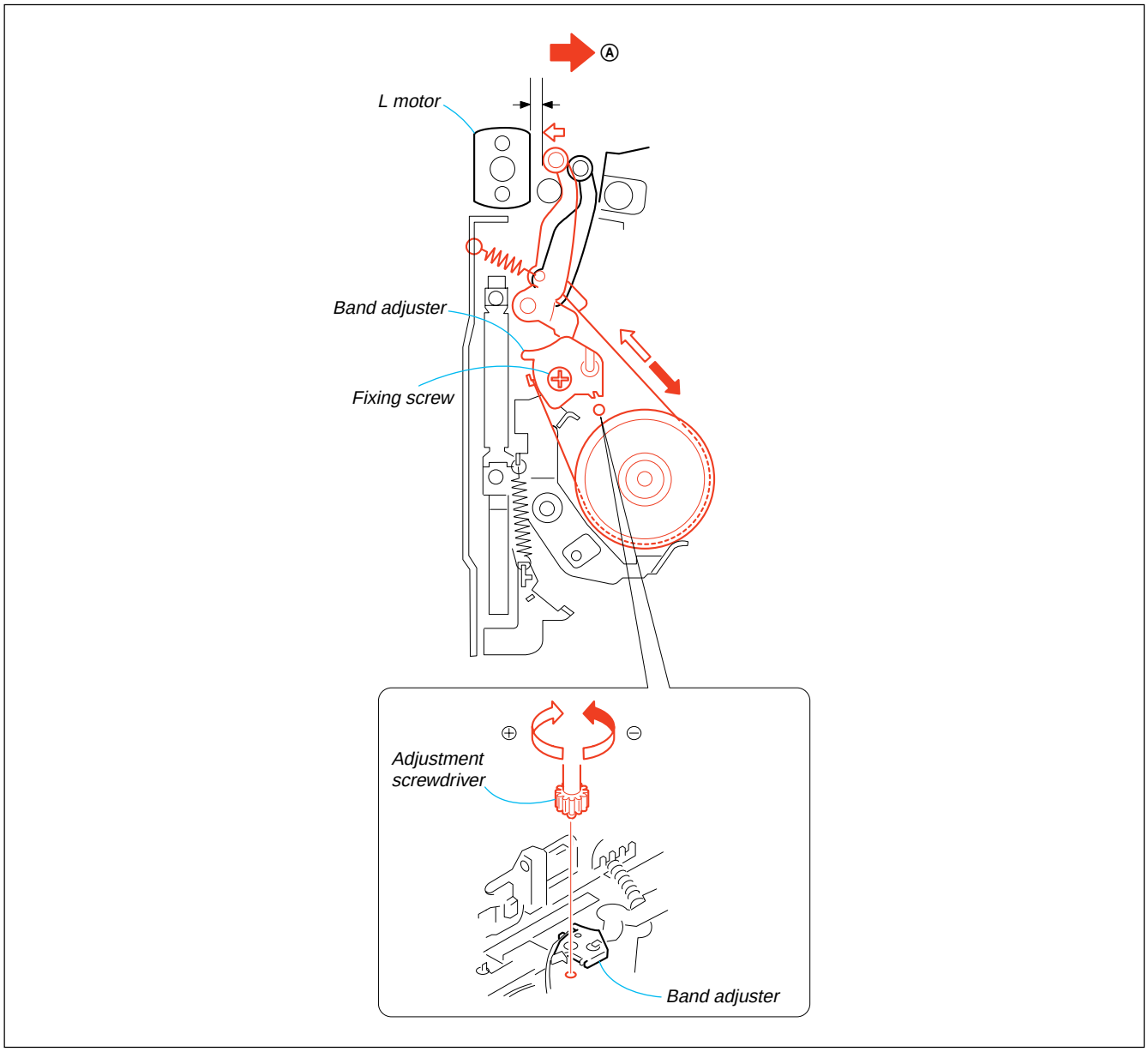


Fig. 4-1

4-3. LS Cam Plate Position Adjustment

1. Adjustment Procedure

1) Loosen the LS cam plate fixing screw (special head screw M1.4 × 1.4) by 180 degrees.
2) Set the STOP mode.
3) While pressing the center of the LS chassis block with the force of 1.5 ± 0.5 N (150 gf ± 50 gf), move the LS cam plate toward the S reel side with the force of 0.147 ± 0.01 N•m (2300 gf ± 200 gf) and tighten the LS cam plate fixing screw (special head screw M1.4 × 1.4) ①.
   Tightening torque: 0.098 ± 0.01 N•m (1.0 ± 0.1 kgf•cm)

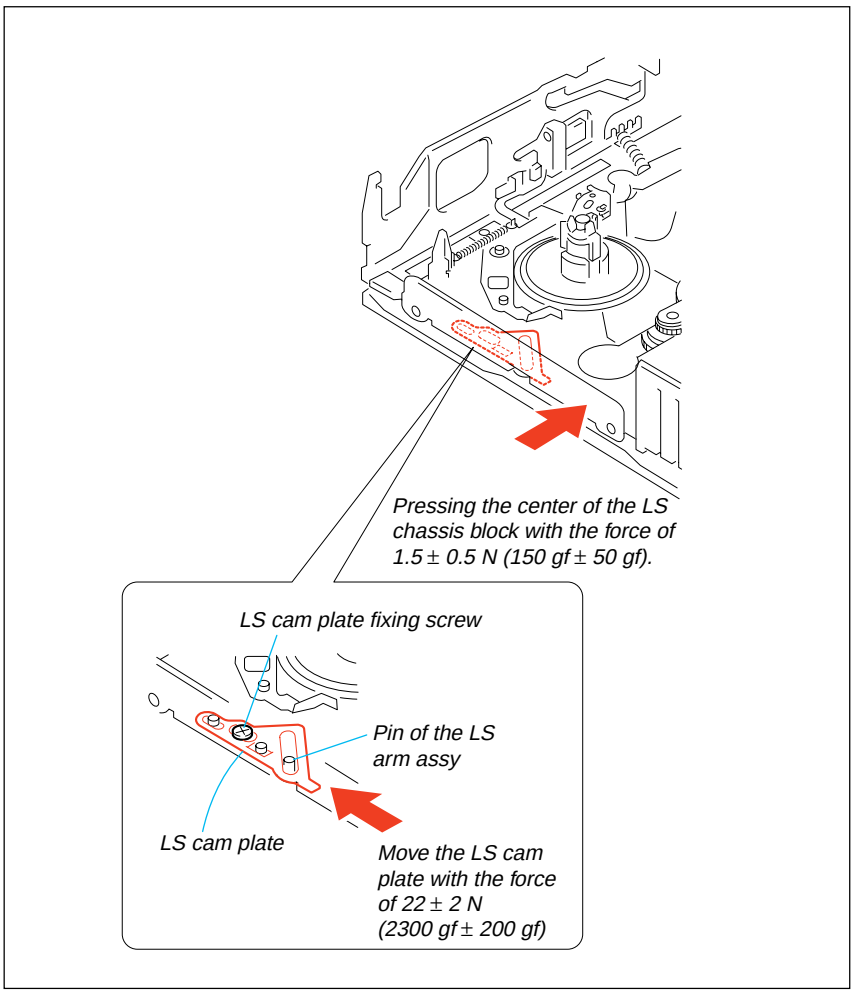

Pressing the center of the LS chassis block with the force of 1.5 ± 0.5 N (150 gf ± 50 gf).
LS cam plate fixing screw
Pin of the LS arm assy
LS cam plate
Move the LS cam plate with the force of 22 ± 2 N (2300 gf ± 200 gf)

Fig. 4-2

4-4. Tape Path Adjustment

4-1. Adjustment Preparation

1) Clean the tape running surface (tape guides, drum, capstan, pinch roller) referring to section 2-2.
2) Connect the adjustment remote commander (Ref. No. J-13) to the LANC terminal of the machine. Set the HOLD switch to ON.
3) Connect an oscilloscope to CN1004 of the VC-312 board via the CPC-7 jig (J-6082-382-A). (In the case of DCR-TRV22K)
   Oscilloscope CH1: VC-312 board CN1004 pin② (Note 1)
   EXT. TRIG: VC-312 board CN1004 pin④
   Note 1: Connect CN1004 pin② and pin⑥ (GND) with a 75-ohm resistor (1-247-804-11).
4) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5).
5) Select page: 0, address: 10 and set data: 00. (Note 2)
6) Select page: 3, address: 26 and set data: 31, and press the PAUSE button. (Note 2)
7) Select page: 3, address: 33 and set data: 08. (Note 2)
8) Confirm that the RF waveform on the scope is flat at both of the entrance side and the exit side. (Refer to Fig. 4-4A.)
   If the RF waveform is not flat either at the entrance side or the exit side (refer to Fig. 4-4 B and C), perform the adjustment of section 6-2 and later.
9) When the required conditions of step 8) are satisfied, perform [Required Work upon Completion of Adjustment] as described below upon completion of adjustment/check.

[Required Work upon Completion of Adjustment]

1) Connect the adjustment remote commander (Ref. No. J-13) to the LANC terminal of the machine. Set the HOLD switch to ON.
2) Select page: 0, address: 10 and set data: 00. (Note 2)
3) Select page: 3, address: 26 and set data: 00, and press the PAUSE button. (Note 2)
4) Select page: 3, address: 33 and set data: 00. (Note 2)
   Note 2: Page and address numbers differ depending on each model. Please to Service Manual of the respective models. Page and address numbers of DCR-TRV22K are shown in this manual.

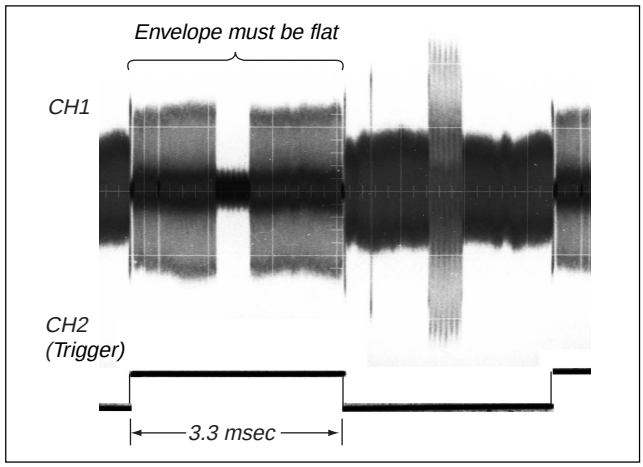


Fig. 4-3

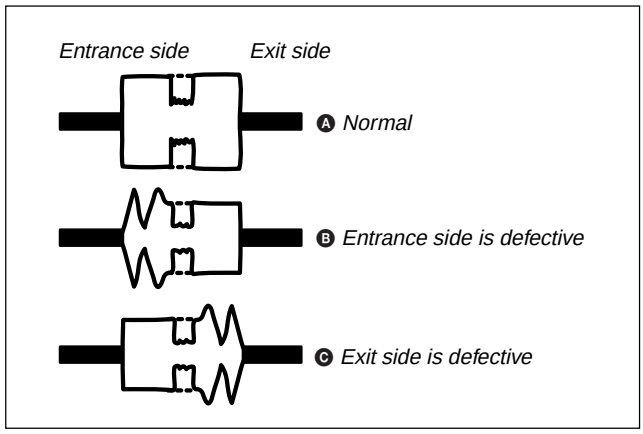


Fig. 4-4

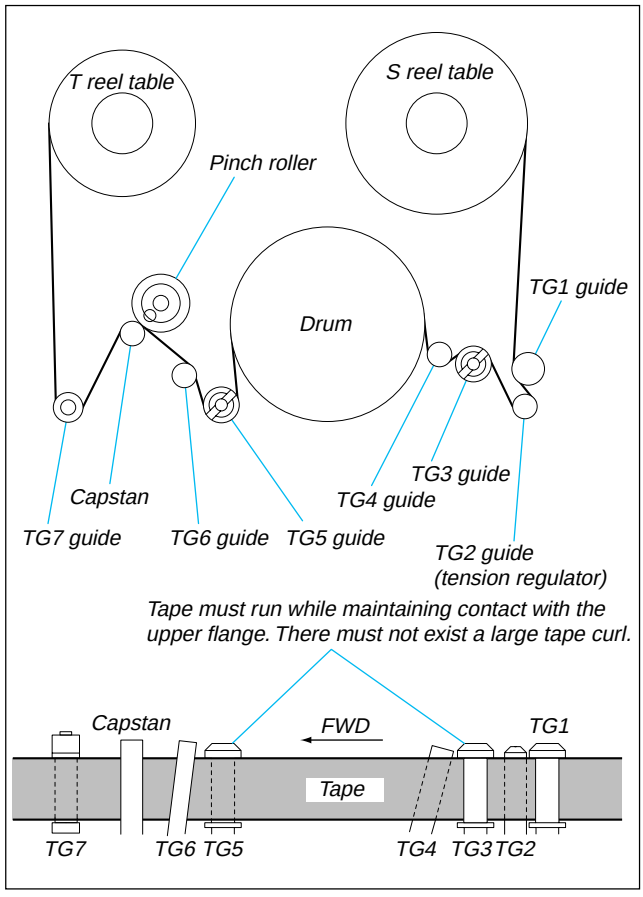


Fig. 4-5

4-2. TG3/TG5 Guide Coarse Adjustment

1) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5).
2) Adjust the TG3 and TG5 guides until the RF envelope waveform becomes flat. (Refer to Fig. 4-8.)

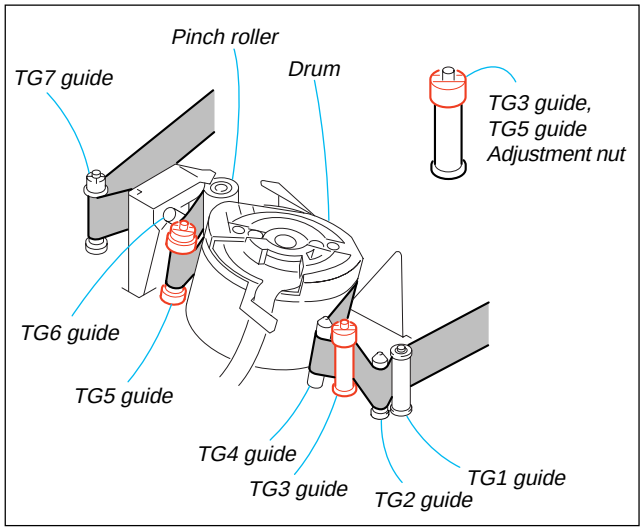


Fig. 4-6

4-3. FWD Back Tension Adjustment

1) Set the mini DV torque cassette (Ref. No. J-6) and establish the FWD mode.
2) Confirm that the S side torque cassette reading value is in the range of 0.2 to 0.3 mN•m (2.0 to 3.0 g•cm) including deviation. If the measurement value does not satisfy the specifications, perform the following adjustment.
   - If the measurement value is higher than the specification: (Decreases the spring tension)
     Move the tension coil spring hook to another spring stay in the direction of Ⓑ.
   - If the measurement value is lower than the specification: (Increases the spring tension)
     Move the tension coil spring hook to another spring stay in the direction of Ⓐ.

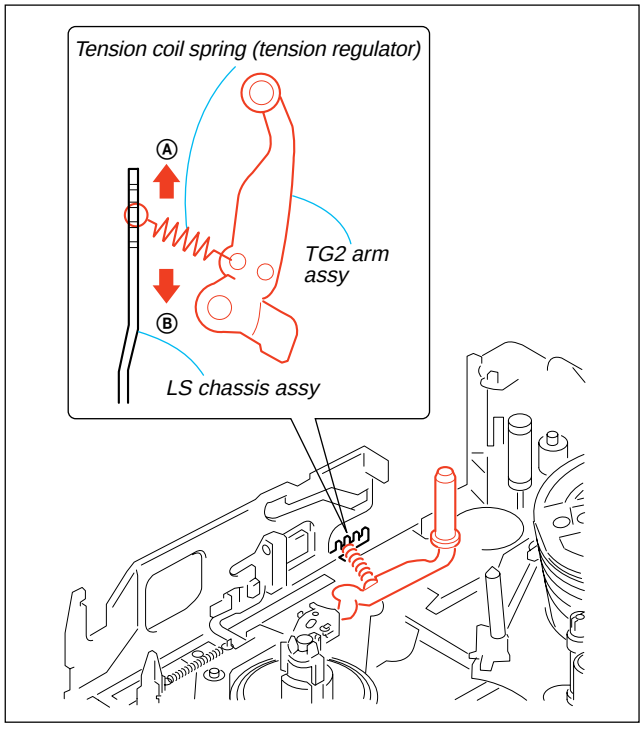


Fig. 4-7

4-4. TG3/TG5 Guide Fine Adjustment

1) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5).
2) Adjust the TG3 so that the RF envelope has the larger amplitude at the entrance side first, than adjust TG3 guide for flat amplitude. (Refer to Fig. 4-8.)
3) Adjust the TG5 so that the RF envelope has the larger amplitude at the exit side first, than adjust TG5 guide for flat amplitude. (Refer to Fig. 4-9.)

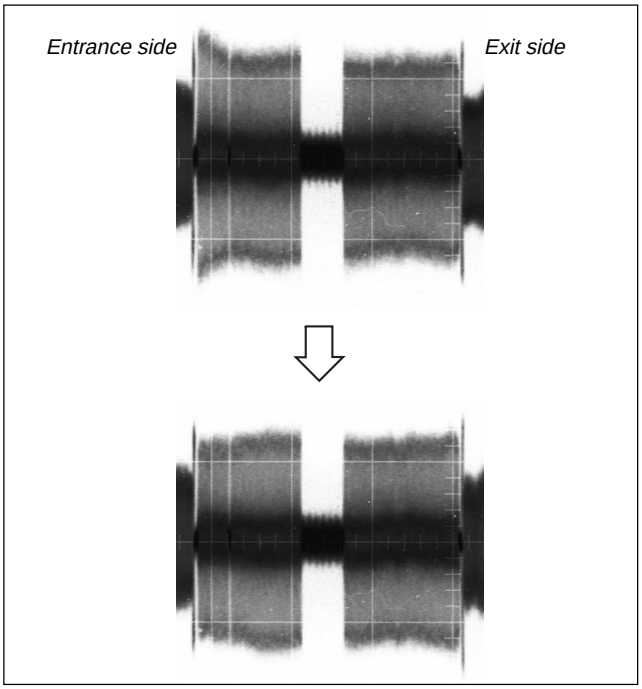


Fig. 4-8

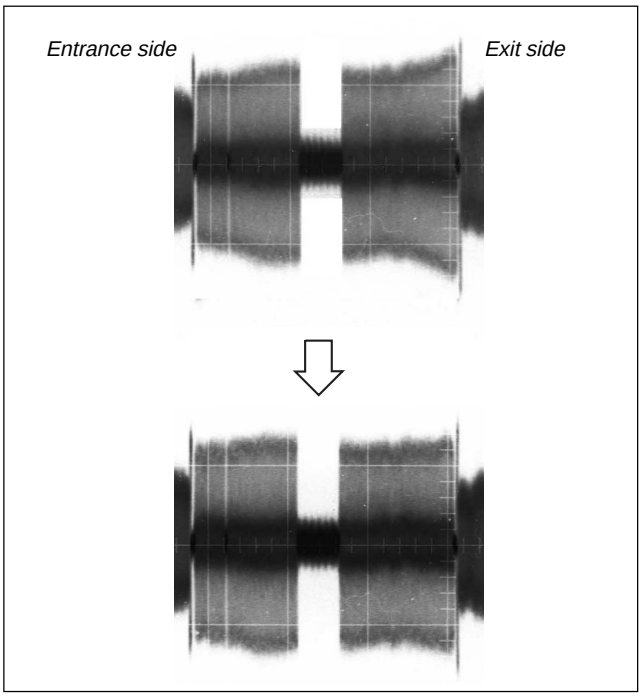


Fig. 4-9

4-5. Tape Run Check

1) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5). Establish the CUE mode first then the REV mode. Confirm in the respective modes that there are no large tape curls at the upper flange of TG3 and TG5. Then confirm in the respective modes that there are no large tape curls at the upper and lower flanges of TG1 and TG7.

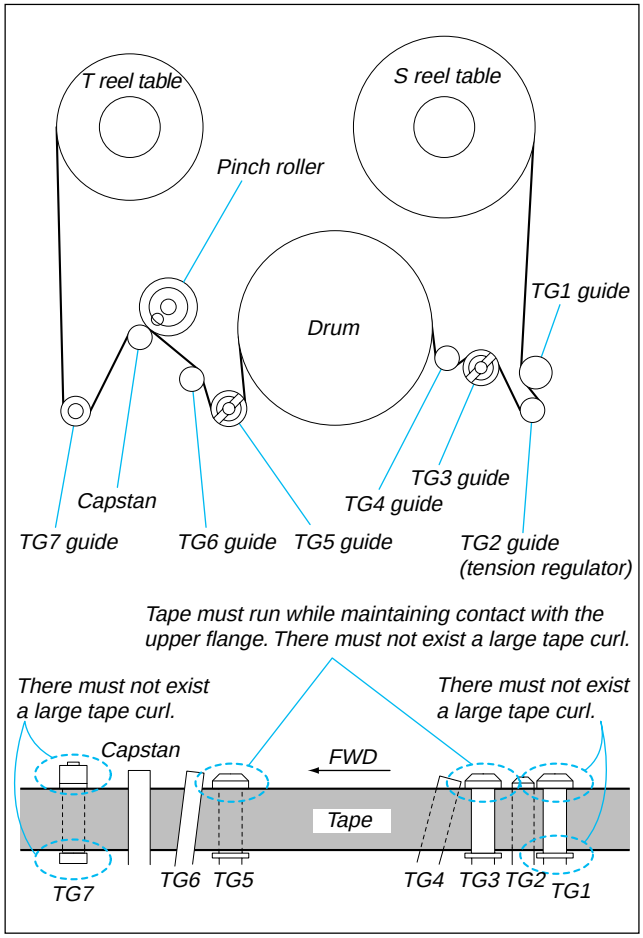


Fig. 4-10

4-6. Check upon Completion of Adjustment

1. Tracking Check

1) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5).
2) Establish the CUE (or REV) mode. Take the amplitude (A) in this mode as the 100% waveform amplitude. (Refer to Fig. 4-11.)
3) Establish the FWD mode. Confirm that the difference between the minimum (E min) and the maximum (E max) is less than 30%. (When taking the amplitude (A) in the CUE or REV mode as 100%)

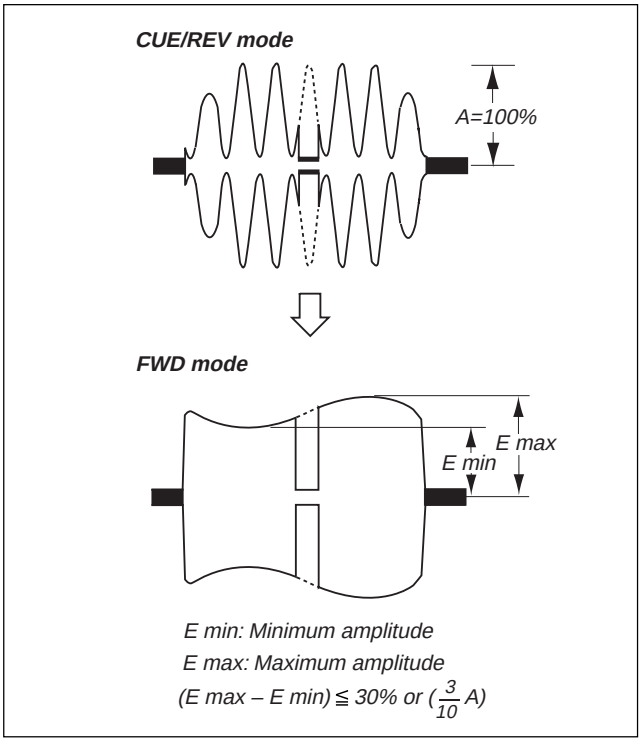


Fig. 4-11

4) Confirm that the RF waveform does not have excessive fluctuation of amplitude. (Fluctuation of amplitude should be 10% or less at both entrance side (B) and exit side (C), when taking the amplitude (A) in the CUE or REV mode as 100%)

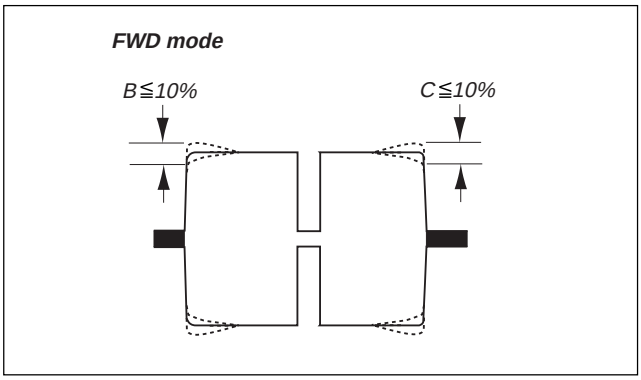


Fig. 4-12

2. CUE/REV Check

1) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5).
2) Establish the CUE mode. Confirm that the pitches between the peaks of the RF waveform are equally spaced. Also confirm that the RF waveform amplitude at entrance side (B) and exit side (C) is 50% or more respectively, when taking the amplitude (A) in the CUE or REV mode as 100%.
3) Establish the REV mode. Confirm that the pitches between the peaks of the RF waveform are equally spaced. Also confirm that the RF waveform amplitude at entrance side (B) and exit side (C) is 50% or more respectively.

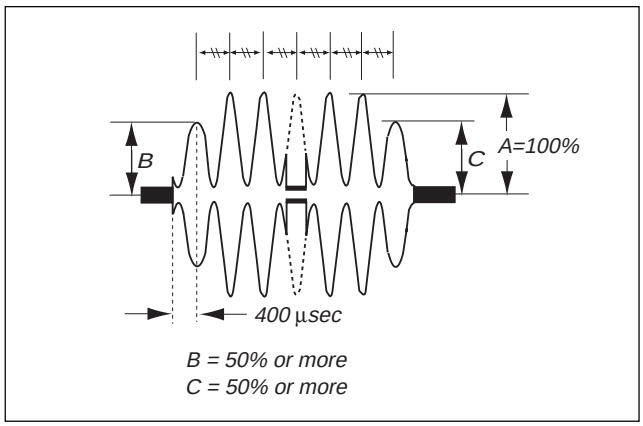


Fig. 4-13

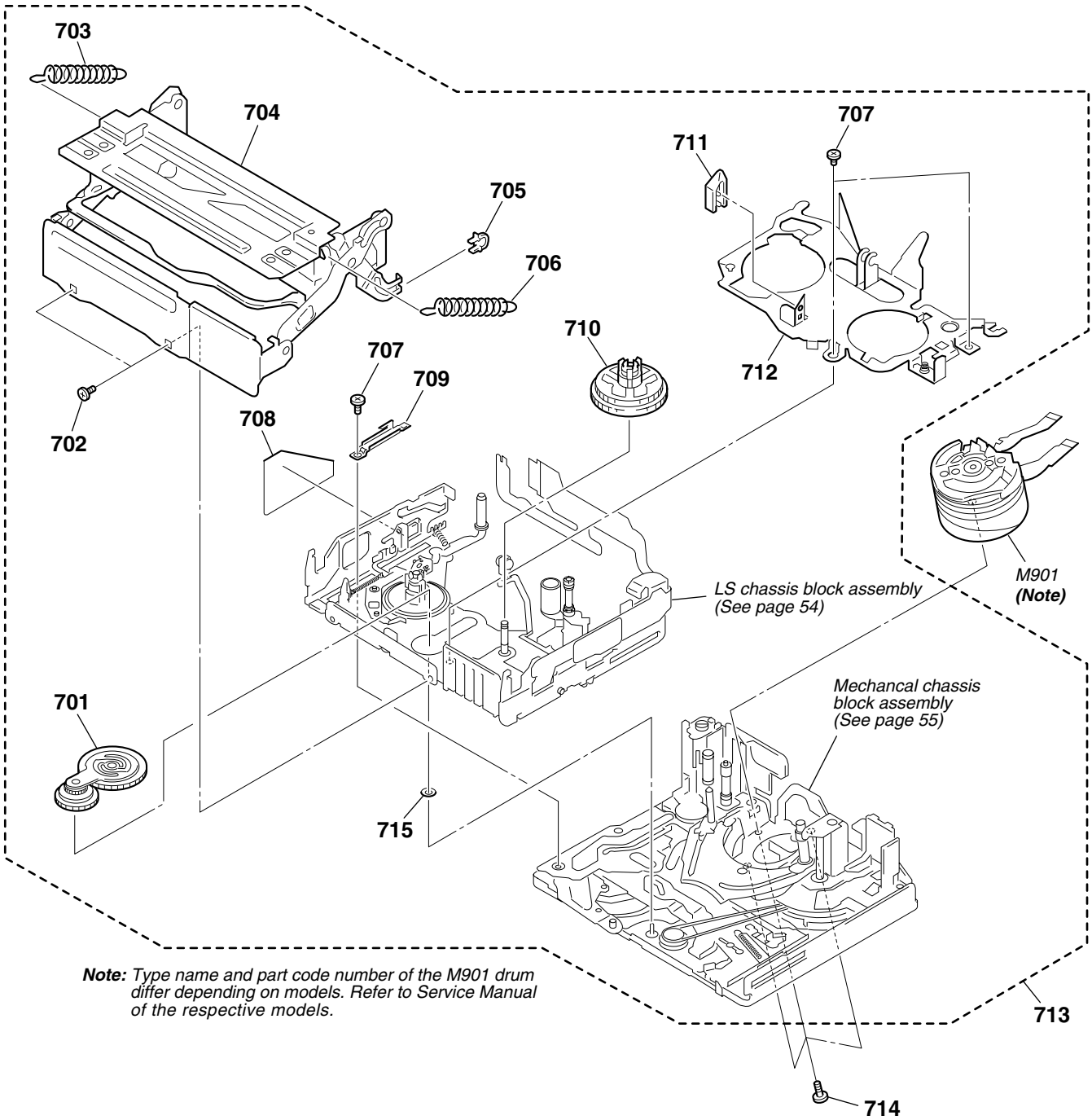
3. Rise-up Check

1) Play back the tracking alignment tape (XH 2-1) (Ref. No. J-5).
2) Change the modes from CUE mode to FWD. Confirm that the RF waveform rises up within two seconds when the mode is changed from CUE mode to FWD.
3) Change the modes from REV mode (two seconds or more of REV and to the FWD within five seconds) to FWD. Confirm that the RF waveform rises up within two seconds when the mode is changed from REV mode to FWD.
4) Change the modes from STOP mode to FWD. Confirm that the RF waveform rises up within two seconds when the mode is changed from STOP mode to FWD.

5. Exploded Views

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

5-1. Overall Mechanism Deck Section (Z100)

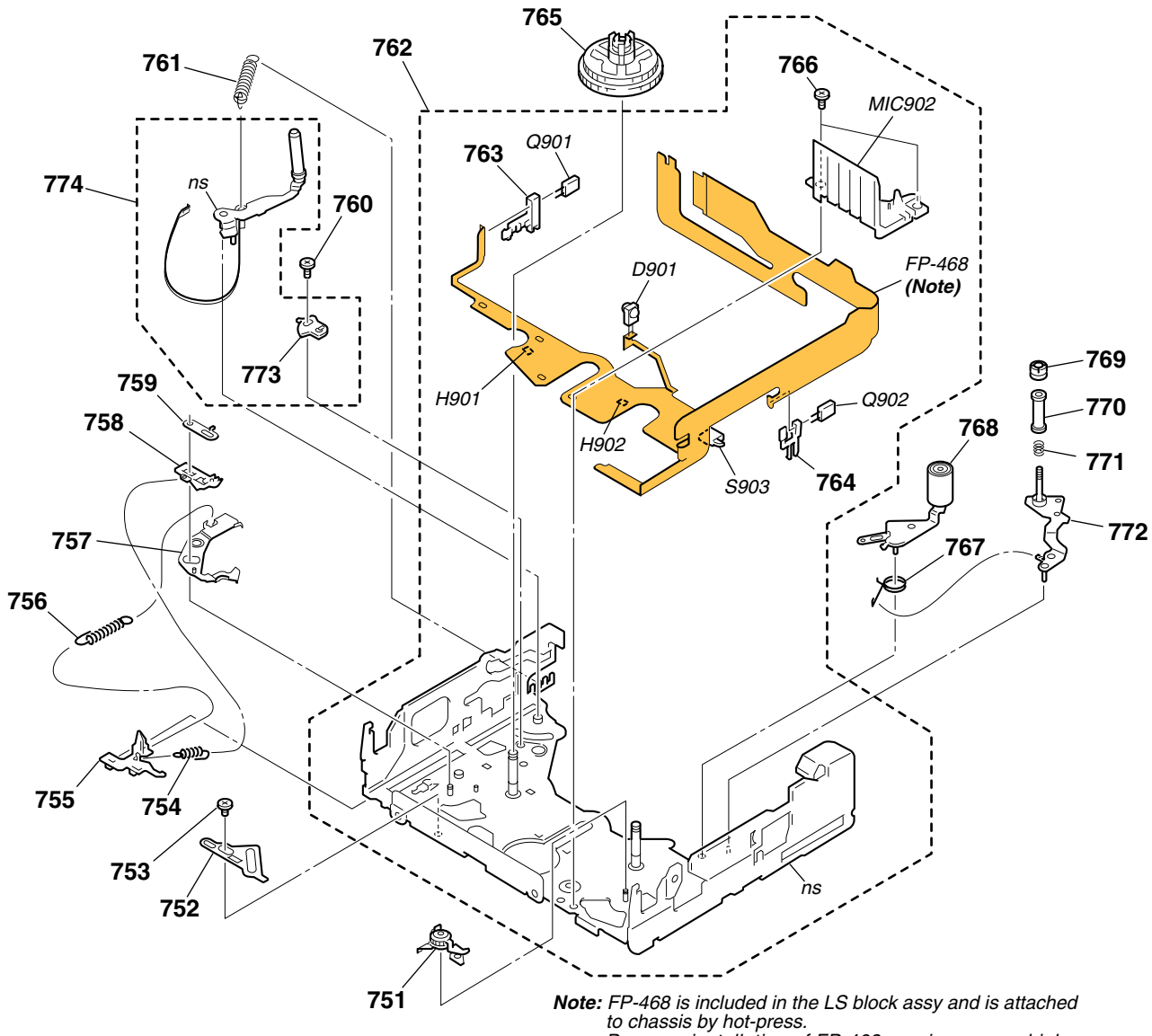


Note: *Type name and part code number of the M901 drum differ depending on models. Refer to Service Manual of the respective models.*

Ref. No.	Part No.	Description
701	X-3952-938-3	GEAR ASSY, GOOSENECK
702	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
703	3-079-206-02	SPRING (POP UP S), EXTENSION
704	X-3952-939-3	COMPARTMENT ASSY, CASSETTE
705	3-079-367-01	DAMPER, CASSETTE COMPARTMENT
706	3-079-215-02	SPRING (POP UP T), EXTENSION
707	3-703-816-15	SCREW (M1.4), SPECIAL HEAD
708	3-080-545-01	COVER, SENSOR S
709	3-079-364-01	RETAINER, LS GUIDE
710	X-3952-937-1	TABLE ASSY, T REEL
711	3-079-366-01	RELEASE, REEL LOCK
712	X-3953-257-1	PLATE ASSY, RETAINER
713	A-7095-393-A	MD (Z100) SUB ASSY
714	3-079-741-02	SCREW,DRUM FIXING
715	3-748-682-01	WASHER,T
M901	– Note –	DRUM (DEH-30A-R)(SERVICE)

5-2. LS Chassis Block Assembly

ns : not supplied



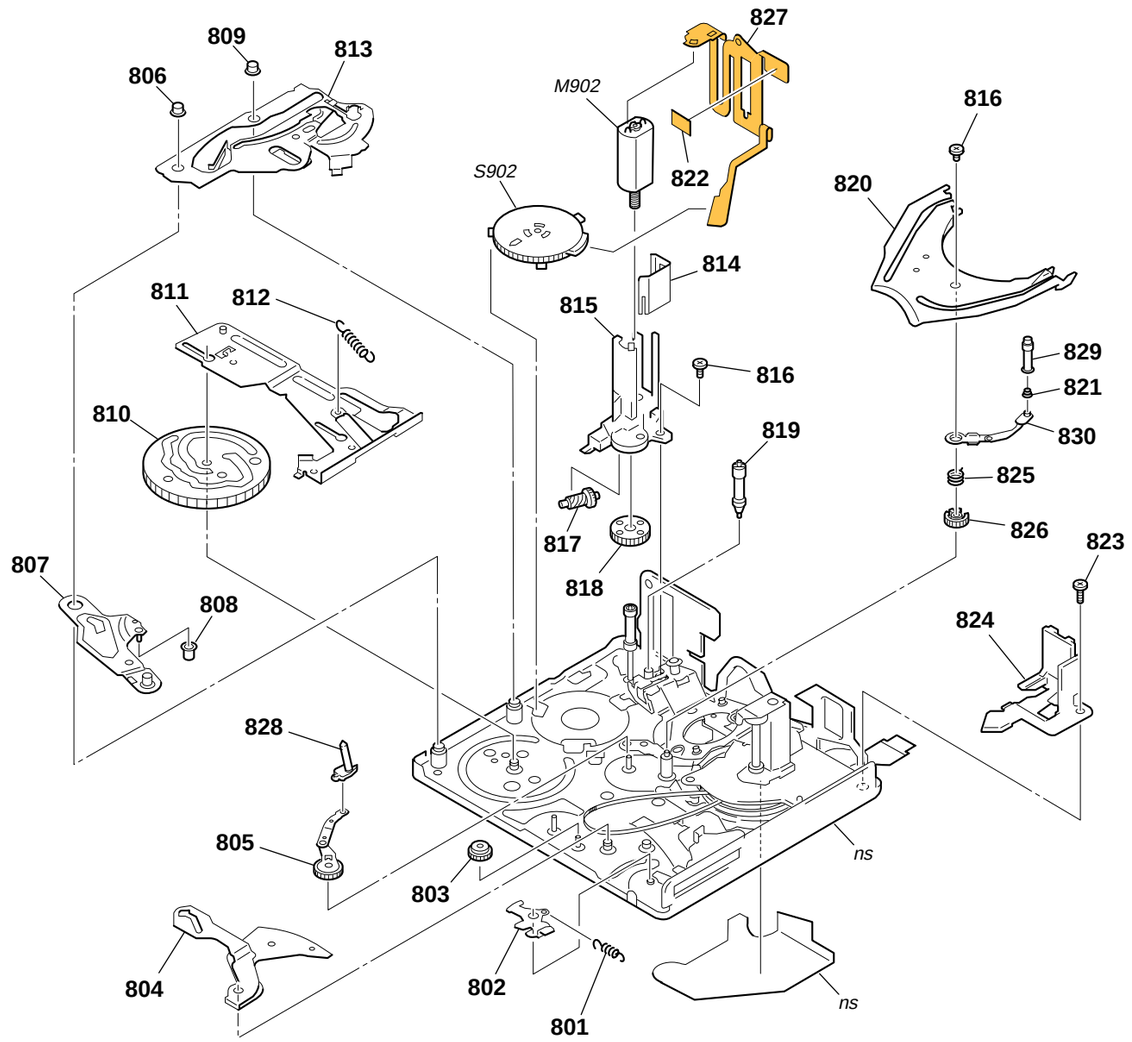
Note: *FP-468 is included in the LS block assy and is attached to chassis by hot-press.*
Because installation of FP-468 requires a very high accuracy, FP-468 is not supplied as an independent service parts.

Ref. No.	Part No.	Description
751	A-7095-402-B	BRAKE (T) BLOCK ASSY
752	3-079-241-01	PLATE, LS CAM
753	3-075-097-11	SCREW (M1.4X1.4), SPECIAL HEAD
754	3-079-246-01	SPRING (RELEASE RACK),EXTENSION
755	3-079-248-01	POSITIONING (S), CASSETTE
756	3-079-244-01	SPRING (ULE), EXTENSION
757	X-3952-932-1	BRAKE ASSY, ULE
758	3-079-245-01	RACK (S), RELEASE
759	3-079-247-01	BRAKE (S)
760	3-059-090-11	SCREW (M1.4X2.5), SPECIAL HEAD
761	3-079-242-01	SPRING, TENSION (TENSION REGULATOR)
762	A-7095-401-A	LS BLOCK ASSY
763	3-079-267-01	HOLDER (S), SENSOR
764	3-079-268-01	HOLDER (T), SENSOR
765	X-3952-936-2	TABLE ASSY, S REEL

Ref. No.	Part No.	Description
766	3-703-816-15	SCREW (M1.4), SPECIAL HEAD
767	3-079-243-01	SPRING (PINCH RETURN), TORSION
768	X-3952-934-1	ARM ASSY, PINCH
769	3-052-062-02	NUT, TG7
770	3-079-219-02	TG7
771	3-081-591-01	SPRING, COMPRESSION (TG7)
772	X-3952-935-3	ARM ASSY, TG7
773	3-079-237-01	ADJUSTOR, BAND
774	A-7095-403-B	TG2 ARM BLOCK ASSY
D901	6-500-471-01	DIODE GL453E00000F (TAPE LED)
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)
MIC902	1-817-175-12	PIN, CONNECTOR (WITH DETECTION SWITCH)
S903	1-529-566-51	SWITCH, PUSH (1 KEY) (C.C. DOWN)
Q901	6-550-402-01	TRANSISTOR PT4850FE000F (TAPE END)
Q902	6-550-402-01	TRANSISTOR PT4850FE000F (TAPE TOP)

5-3. Mechanical Chassis Block Assembly

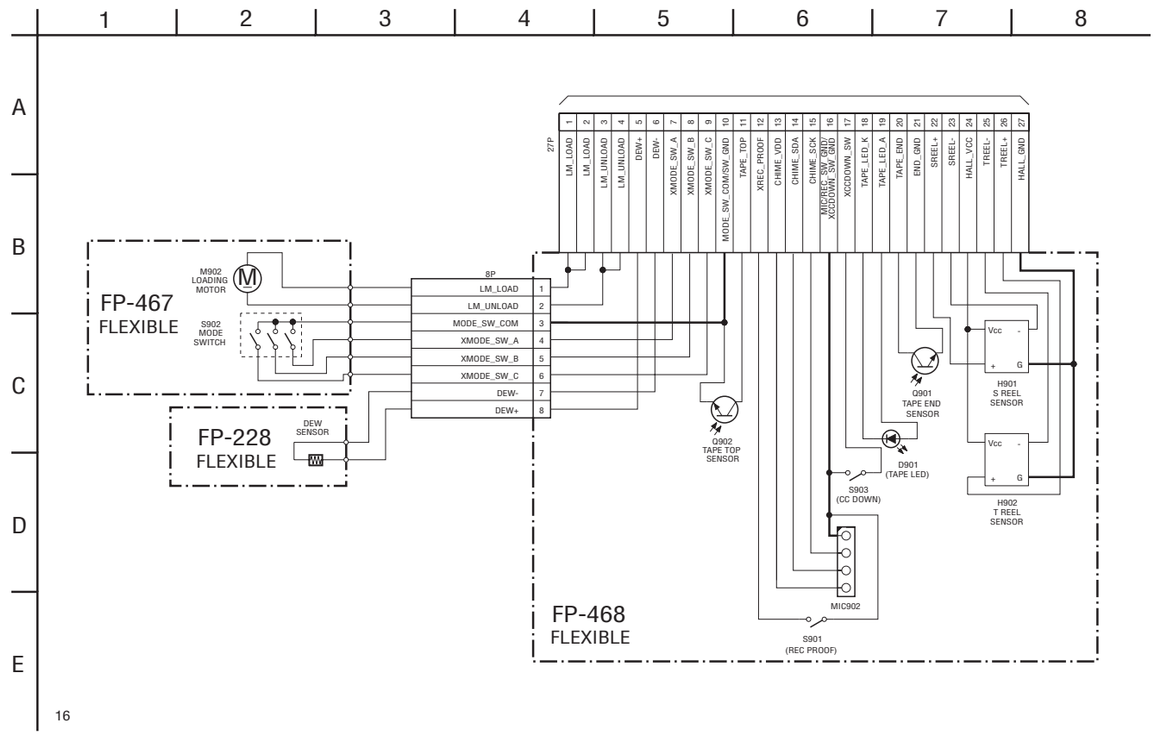
ns : not supplied



Ref. No.	Part No.	Description
801	3-079-314-01	SPRING (EJ), EXTENSION
802	3-079-327-01	ARM, EJ
803	3-079-323-02	GEAR, CONVERSION
804	3-079-324-02	ARM, GL DRIVING
805	X-3952-928-1	GL (S) ASSY
806	3-079-315-01	ROLLER (S1), LS GUIDE
807	X-3952-925-1	ARM ASSY, LS
808	3-079-320-01	ROLLER, LS
809	3-079-316-01	ROLLER (S2), LS GUIDE
810	3-079-319-01	GEAR, CAM
811	X-3952-941-1	SLIDER ASSY, M
812	3-079-321-02	SPRING (PINCH), EXTENSION
813	X-3952-940-2	PLATE ASSY, TG2 CAM
814	3-079-312-01	SHIELD, MOTOR
815	3-079-307-01	HOLDER, MOTOR
816	3-703-816-15	SCREW (M1.4), SPECIAL HEAD

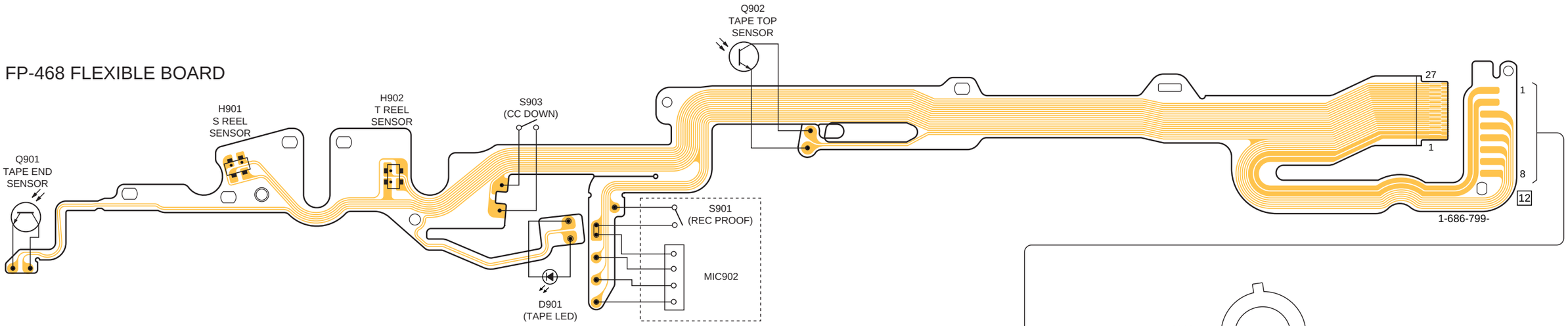
Ref. No.	Part No.	Description
817	3-079-308-01	SHAFT, WORM
818	3-079-309-01	GEAR, DECELERATION
819	X-3952-942-2	ROLLER ASSY, TG3
820	3-079-325-01	RAIL, GUIDE
821	3-079-295-02	SPRING, TG5
822	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)
823	3-079-328-01	SCREW ,SPECIAL (EG GRIP)
824	3-079-326-02	SUPPORT, TG7
825	3-079-301-01	SPRING (GLT), TORSION
826	3-079-298-01	GEAR (T), GL
827	1-686-798-11	FP-467 FLEXIBLE BOARD
828	X-3952-927-2	COASTER (S) ASSY
829	X-3952-930-3	ROLLER ASSY, TG5
830	X-3952-929-3	COASTER (T) ASSY
M902	A-7095-396-A	MOTOR BLOCK ASSY, L (LOADING)
S902	1-477-679-11	ROTARY, ENCODER (SWITCH)

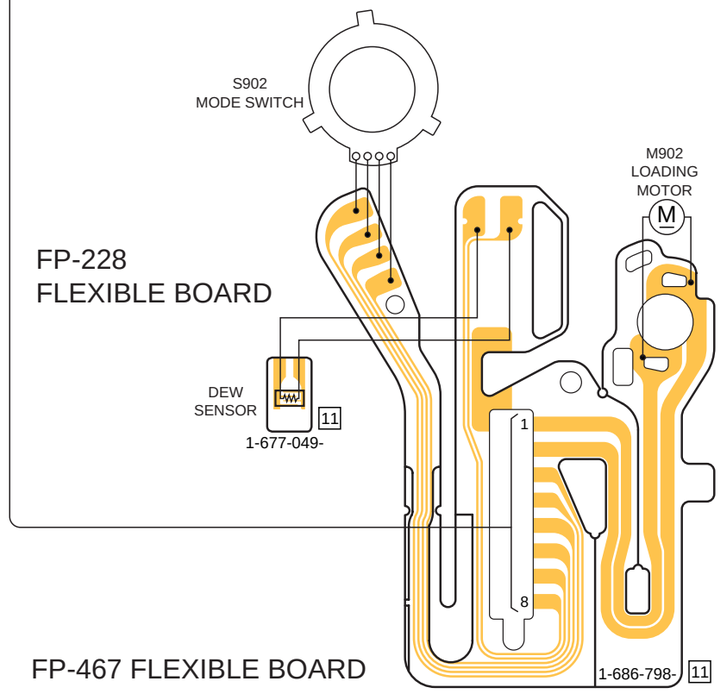
6. Schematic Diagrams



16

7. Printed Wiring Boards





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Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.01	Official Release	—	—